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AUTHOR Greer, David R.; And Others
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ABSTRACT

Designed to provide pre- and inservice vocational education administrators with the skills necessary to manage vocational buildings and equipment, this competency-based learning module consists of an introduction and six sequential learning experiences. Each learning experience contains an overview with objectives and required and optional learning activities. Topics covered in the first five learning experiences are (1) critiquing administrator performance in assigning facilities to internal departments or activities, (2) critiquing administrator performance in coordinating use of facilities by two community organizations, (3) analyzing a given equipment-and-supply inventory procedure and recommending additional or corrected elements, (4) analyzing a given description of a buildings-and-equipment preventive maintenance program and recommending additional or corrected elements, and (5) conducting and documenting a safety appraisal inspection of an actual educational facility and prescribing remedies to correct the problems. The final learning experience involves managing vocational buildings and equipment in an actual administrative situation. An administrator performance assessment form is provided. (Related competency-based vocational education administrator modules covering other skills are available separately--see note.) (YLB)

ED212839

Leadership and Training Series No. 58B-16

MANAGE VOCATIONAL BUILDINGS AND EQUIPMENT

COMPETENCY-BASED VOCATIONAL EDUCATION ADMINISTRATOR MODULE SERIES

Consortium for the Development of Professional
Materials for Vocational Education

Robert E. Norton, Consortium Program Director
David R. Greer, Graduate Research Associate
Lois G. Harrington, Program Associate

The National Center for Research in Vocational Education
The Ohio State University
1960 Kenny Road
Columbus, Ohio 43210

CE 031 322

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For further information contact:

The Program Information Office
The National Center for Research in Vocational Education
The Ohio State University
1960 Kenny Road
Columbus, Ohio 43210

Telephone: (614) 486-3655 or (800) 848-4815
Cable: CTVOCEDOSU/Columbus, Ohio

FOREWORD

The need for competent administrators of vocational education has long been recognized. The rapid expansion of vocational education programs and increased student enrollments have resulted in a need for increasing numbers of vocational administrators at both the secondary and postsecondary levels. Preservice and inservice administrators need to be well prepared for the complex and unique skills required to successfully direct vocational programs.

The effective training of local administrators has been hampered by the limited knowledge of the competencies needed by local administrators and by the limited availability of competency-based materials specifically designed for the preparation of vocational administrators. In response to this pressing need, the Occupational and Adult Education Branch of the U.S. Office of Education, under provisions of part C--Research of the Vocational Education Amendments of 1968, funded the National Center for a scope of work entitled "Development of Competency-Based Instructional Materials for Local Administrators of Vocational Education" during the period 1975-77. That project had two major objectives:

1. To conduct research to identify and nationally verify the competencies considered important to local administrators of vocational education.
2. To develop and field test a series of prototypic competency-based instructional packages and a user's guide. One hundred sixty-six (166) high priority competencies were identified and six prototypic modules and a user's guide were developed, field tested, and revised.

Although six modules had been developed, many more were needed to have competency-based materials that would address all the important competencies that had been identified and verified. In September 1978 several states joined with the National Center for Research in Vocational Education to form the Consortium for the Development of Professional Materials for Vocational Education. Those states were Illinois, Ohio, North Carolina, New York, and Pennsylvania. The first five states were joined by Florida and Texas later in the first year. The first objective of the Consortium was to develop and field test additional competency-based administrator modules of which this is one.

Several persons contributed to the successful development and field testing of this module on managing vocational buildings and equipment. David R. Greer, Graduate Research Associate, assumed the major responsibility for reviewing the literature, preparing the actual manuscript, and refining the module for publication after field testing. Recognition also goes to the two consultants who helped conceptualize the module and prepared draft materials for the manuscript: Herb Chamberlain, Director of Vocational Education, Eastland Vocational Center, Groveport, Ohio; and Jim Stickley, Director/Principal, Upper Valley JVS, Piqua, Ohio.

Acknowledgement is given to the three official reviewers who provided critiques of the module and suggestions for its improvement: Carmine T. Antonelli, Assistant Superintendent, Suffolk BOCES #1, Westhampton Beach, New York; Harold E. Finn, Regional Vocational Administrator, Illinois State Board of Education, Mt. Vernon, Illinois; and Donald H. Fischer, Superintendent, Vanguard JVS, Fremont, Ohio.

Credit goes to Lois G. Harrington, Program Associate, who helped to refine the module for publication after field testing; and to Robert E. Norton, Consortium Program Director, for providing program leadership and content reviews. Thanks go to Ferman B. Moody, Associate Director for Personnel Development, for his administrative assistance.

Appreciation is also extended to Calvin Cotrell, James Haire, George Kosbab, Patricia Lindley, Helen Lipscomb, Aaron J. Miller, Dominic Mohamed, Robert Mullen, James Parker, Dale Post, Wayne Ramp, and Kenneth Swatt for their service as state representatives, state department contacts, and field-test coordinators; and to the other teacher educators and local administrators of vocational education who used the modules and provided valuable feedback and suggestions for their improvement. Last, but certainly not least, thanks and credit are due Deborah Linehan, Consortium Program Secretary, for her patience and expert skill in processing the many words necessary to make this module a quality document.

Robert E. Taylor
Executive Director
The National Center for Research
in Vocational Education

INTRODUCTION

Many vocational education institutions are blessed with modern, attractive, well-designed buildings that are complemented with up-to-date equipment. However, as an administrator, you realize that such facilities "don't grow on trees." The buildings and equipment provided by initial capital appropriations and bond issues will have to last a long time before more public funds will be available to replace them. Moreover, since most of these facilities were originally purchased by public funds, you will want to make them available for community use as much and as long as possible.

This module deals with several aspects of facilities management that are implied in the above description. It presents a number of principles governing the internal assignment of rooms and equipment for maximum use. Furthermore, several guidelines for community use of these facilities are discussed and applied.

Next, the module will help you gain skill in establishing an inventory system (to assure accountability and assign responsibility for the custody of equipment) and in monitoring the consumption of supplies. The module also covers the next step in the care and management of equipment: the provision of a maintenance program that provides both for the prevention of wear and tear, and for the detection and repair of breakdowns when they occur.

Finally, the module covers the related areas of health, safety, and security. By following a program of inspections, drills, and assigned duties, you can make sure your facilities are not only educational but also free from hazards that might cause illness or injury to students and staff. Certain emergency procedures will be explained, as will precautionary measures that can prevent loss of buildings and equipment through fire, accident, theft, and other unfortunate events.

Module Structure and Use

This module contains an introduction and six sequential learning experiences. Overviews, which precede each learning experience, contain the objectives for each experience and a brief description of what the learning experience involves.

Objectives

Terminal Objective: While working in an actual administrative situation, manage vocational buildings and equipment. Your performance will be assessed by your resource person, using the "Administrator Performance Assessment Form," pp. 105-109. (Learning Experience VI)

Enabling Objectives:

1. After completing the required reading, critique the performance of an administrator in a given case study in assigning facilities to internal departments or activities. (Learning Experience I)
2. After completing the required reading, critique the performance of an administrator in a given case study in coordinating the use of facilities by two community organizations. (Learning Experience II)
3. After completing the required reading, analyze a given equipment-and-supply inventory procedure, and recommend additional or corrected elements for that procedure. (Learning Experience III)
4. After completing the required reading, analyze a given description of a buildings-and-equipment preventive maintenance program, and recommend additional or corrected elements for that program. (Learning Experience IV)
5. After completing the required reading, (1) conduct and document a safety appraisal inspection of an actual educational facility, and (2) prescribe remedies to correct the problems identified in the institutional health-safety-security inspection report described in a given case study. (Learning Experience V)

Resources

A list of the outside resources that supplement those contained within the module follows. Check with your resource person (1) to determine the availability and the location of these resources, (2) to locate additional references specific to your situation, and (3) to get assistance in setting up activities with peers or observations of skilled administrators.

DOC. 8

Learning Experience I

Optional

- AN EXPERIENCED VOCATIONAL ADMINISTRATOR whom you can interview concerning how he/she classifies, assigns, and records the use of physical facilities.

Learning Experience II

Optional

- A CONFERENCE OR OTHER EVENT at which you can observe how the physical facilities were arranged and how accommodations and equipment were provided.

Learning Experience III

Optional

- AN EXPERIENCED ADMINISTRATOR whom you can interview concerning how he/she organizes and operates an inventory system.

Learning Experience IV

Optional

- AN EXPERIENCED ADMINISTRATOR OR MAINTENANCE SUPERVISOR whom you can interview concerning how he/she organizes and operates a preventive maintenance system in either an educational institution or a business or industrial firm.

Learning Experience V

Required

- AN ACTUAL EDUCATIONAL FACILITY in which you can conduct a safety appraisal inspection.
- A RESOURCE PERSON to assess your competency in conducting a safety appraisal inspection of an educational facility.

Optional

- REFERENCE: Developing Shop Safety Skills. Athens, GA: American Association for Vocational Instructional Materials, 1979.

Learning Experience VI

Required

- AN ACTUAL ADMINISTRATIVE SITUATION in which, as part of your duties, you can manage vocational buildings and equipment.
- A RESOURCE PERSON to assess your competency in managing vocational buildings and equipment.

Selected Terms

Administrator--refers to a member of the secondary or postsecondary administrative team. This generic term, except where otherwise specified, refers to the community college president, vice-president, dean, or director; or to the secondary school principal, director, or superintendent.

Board--refers to the secondary or postsecondary educational governing body. Except where otherwise specified, the term "board" is used to refer to a board of education and/or a board of trustees.

Institution--refers to a secondary or postsecondary educational agency. Except where otherwise specified, this generic term is used to refer synonymously to secondary schools, secondary vocational schools, area vocational schools, community colleges, postsecondary vocational and technical schools, and trade schools.

Resource Person--refers to the professional educator who is directly responsible for guiding and helping you plan and carry out your professional development program.

Teacher/Instructor--these terms are used interchangeably to refer to the person who is teaching or instructing students in a secondary or postsecondary educational institution.

User's Guide

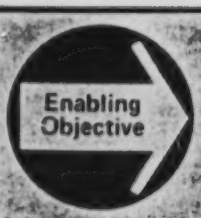
For information that is common to all modules, such as procedures for module use, organization of modules, and definitions of terms, you should refer to the following supporting document:

> Guide to Using Competency-Based Vocational Education Administrator Materials. Columbus, OH: The Center for Vocational Education, The Ohio State University, 1977.

This module addresses task statement numbers 142-149 from Robert E. Norton et al., The Identification and National Verification of Competencies Important to Secondary and Post-Secondary Administrators of Vocational Education (Columbus, OH: The Center for Vocational Education, The Ohio State University, 1977). The 166 task statements in this document, which were verified as important, form the research base for the National Center's competency-based administrator module development.

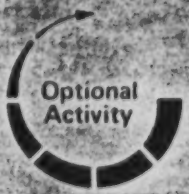
Learning Experience I

OVERVIEW



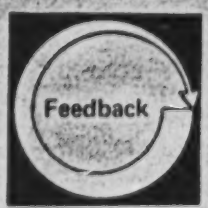
After completing the required reading, critique the performance of an administrator in a given case study in assigning facilities to internal departments or activities.

You will be reading the information sheet, "Principles of Assigning Space and Coordinating the Use of Equipment," pp. 9-20.



You may wish to interview a vocational education administrator concerning how he/she classifies, assigns, and records the use of physical facilities in his/her institution.

You will be reading the "Case Study," pp. 23-24, and critiquing the performance of the administrator described.



You will be evaluating your competency in critiquing the administrator's performance in assigning facilities by comparing your completed critique with the "Model Critique," pp. 25-26.

For information about how to assign facilities to departments, divisions, and other internal users, read the following information sheet.

PRINCIPLES OF ASSIGNING SPACE AND COORDINATING THE USE OF EQUIPMENT

Vocational education facilities can be categorized as (1) buildings or space (e.g., shops, laboratories, classrooms, offices, meeting rooms), and (2) equipment (e.g., lathes, welders, typewriters, computers, projectors, desks, tractors, ovens). All of these facilities are public property, for which the board is ultimately accountable. To discharge this responsibility and to ensure that all vocational facilities are used to their maximum potential, the board delegates to certain administrators the authority to assign or coordinate the use of these facilities among the appropriate instructional and service units of the institution.

Assignment is a process that can occur on at least three levels. Most broadly, you could assign a room or item of equipment to a user on a semi-permanent basis. For example, the tractor repair shop--along with its hoists, valve grinders, drill press, tool sets, stools, bulletin boards, and so on--might be assigned to the agricultural mechanics coordinator. At an intermediate level, certain facilities could be assigned to various users on a recurring basis for specific, limited periods of time. An example of this is the assignment of classroom #999 to the drafting class from 9 a.m. to 10 a.m. every Monday, Wednesday, and Friday during the spring semester, or the assignment of the main conference room to the board of trustees from 4 p.m. to 7 p.m. the third Monday of every month. Finally, at the most specific level, facilities may be assigned as needed to nonrepetitive users on a case-by-case basis. A typical example of this is the assignment of the assembly hall to the DECA chapter for Friday evening, February 29, along with a 16mm movie projector, lectern, and portable chalkboard. These types of assignments can also be applied at different levels within the institution. That is, a room could be assigned to a teacher/instructor, to an occupational specialty, to a department or vocational service area, and so on.

In this information sheet, we will be discussing primarily the principles related to the first and last types of assignments. The intermediate kind of assignment is usually termed scheduling, and it is related to developing other types of schedules--time, faculty, and student--along with the allocation of space.[1]

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1. For information concerning scheduling, you may wish to refer to Manage the Development of Master Schedules, part of the Competency-Based Vocational Education Administrator Module Series (Columbus, OH: The National Center for Research in Vocational Education, The Ohio State University, in development).

Space Inventory

Before you can start to make new assignments of instructional, administrative, and general-purpose space, or to record assignments that have already been made, you need to have an accurate record of all the space belonging to your institution. The most useful type of record is a space, or building and room, inventory (see sample 1). The form of this record can be altered to suit your particular situation or purposes, but it probably should at least consist of (1) floor plans or sketch maps, (2) listings categorized by room type (e.g., general classroom, shop, laboratory, administrative/faculty office, conference room) or room size, and (3) listings of room area, capacity, and contents.

If your institution is small, these records can be created and maintained manually. For larger institutions, you may wish to consider the use of a computer or other data processing device to assist with the preparation of the various summaries and with the computation of the space utilization rates often required by governmental reporting forms.

In either case, you should be certain that a compact, usable version of the inventory is available for convenient desk reference. This can facilitate the many everyday decisions you might have to make concerning room or space assignments.

Semipermanent Assignment of Specialized, Single-Use Space

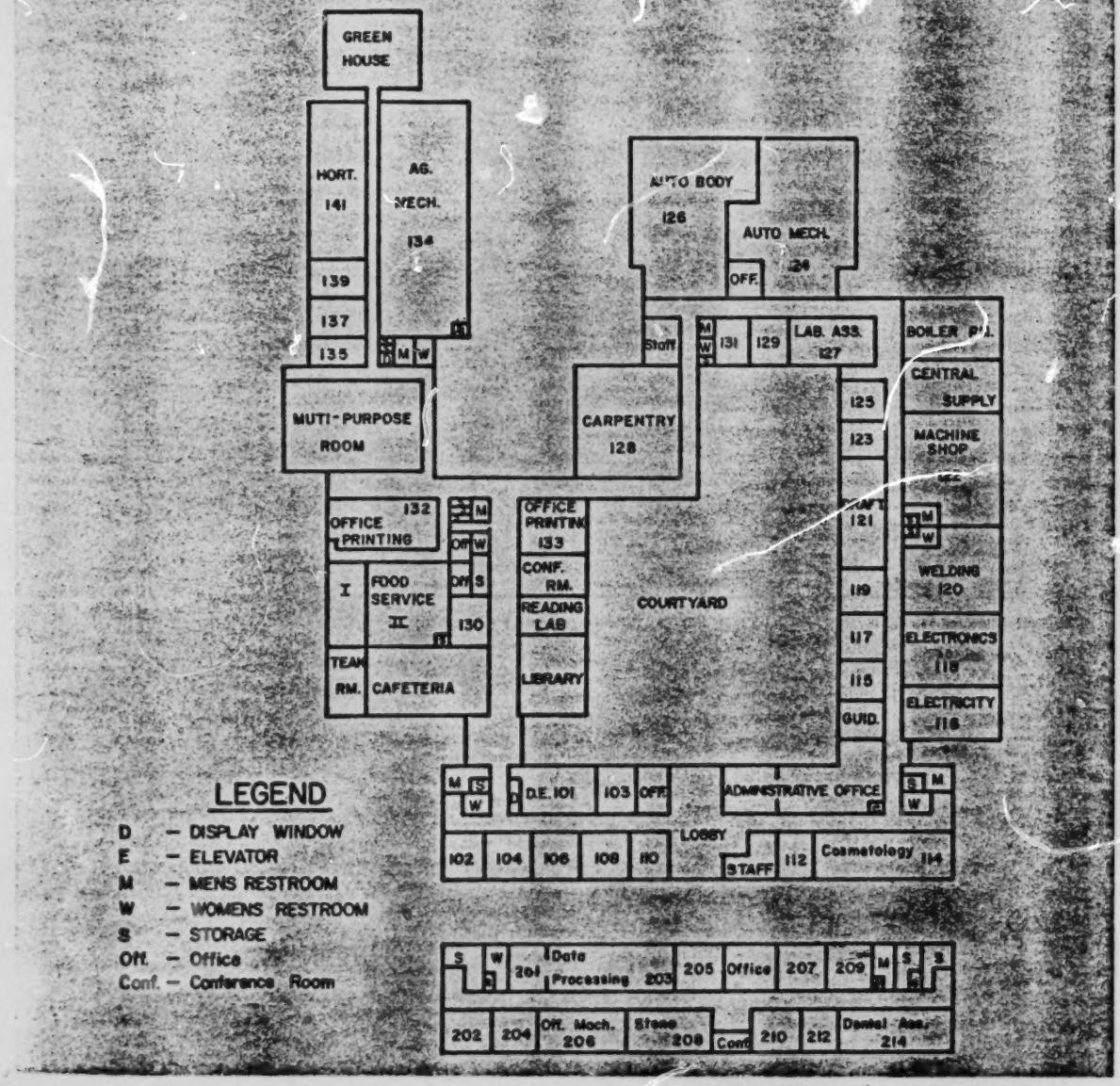
Many of the shops, laboratories, and other units of space in your institution will be most appropriately assigned to certain users on a semipermanent basis, with the assignee having nearly exclusive prerogatives of access to and use of the particular facility. Since assignment on this basis can reduce the flexibility often desired by a central administrator, this practice should be restricted to only those facilities meeting most or all of the following criteria:

- The equipment and services built into or located in the room require special training to operate, and this training is normally given only to the instructors and students of a particular vocational program (e.g., dictating machines in an office practice lab, or a compressed air/vacuum system in a dental hygiene clinic).
- The equipment or services are particularly susceptible to tampering or misuse, and such abuse could lead to expensive repairs or loss of availability of the equipment for instructional purposes (e.g., metal working tools in a machine shop).
- The equipment requires a great deal of time to readjust to precision settings or calibration. This problem would be crucial in the case of electronic test equipment, X-ray machines, or precision lathes, but not nearly so severe in the case of resetting the margins on a typewriter.

SAMPLE 1

SPACE INVENTORY

EASTLAND VOCATIONAL CENTERS ROOM FACILITY LAYOUT



EASTLAND VOCATIONAL CENTER
Groveport, Ohio

SECTION A
T & I FACILITIES SUMMARY

LABS	ROOM NO.	GROSS SQ. FT.	PAGE
Auto Body	126	6606	1
Auto Mechanics	124	6617	2
Carpentry	128	4445	3
Cosmetology	114	2376	4
Dental Assisting	214	1956	5
Design Drafting	121	1791	6
Electricity	116	2378	7
Electronics	118	2390	8
Laboratory Assistant	127	1711	9
Machine Trades	122	4144	10
Welding	120	2480	11

T & I CLASSROOMS

ROOM NO.	GROSS SQ. FT.	PAGE NO.
112	690	12
115	712	13
117	712	14
119	712	15
123	718	16
125	605	17
129	705	18
131	705	19
209	857	20

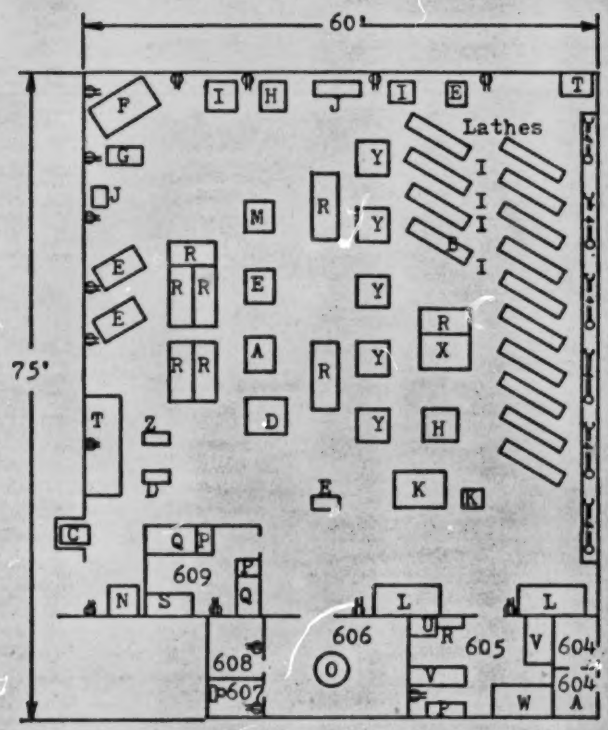
EASTLAND JOINT VOCATIONAL CENTER

FACILITIES LAYOUT

Scale: 1"=15.4'

Room Name Machine Trades

Room No./Location 122 Total Area 4144 Sq. ft.



AREAS: (In sq. ft.)

122 Lab	3547
604 Storage	25
604A Storage	25
605 Tool Room	205
606 Locker Rm.	198
607 Restroom	30
608 Storage	42
609 Office	94.5

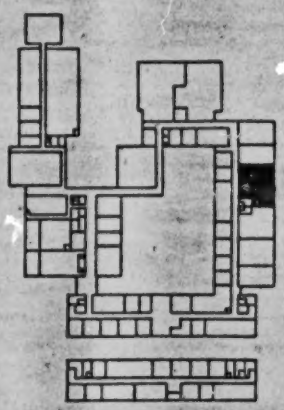
FACILITIES:

Chairs

A. Vertical Turret Lathes
B. Turret Lathes
C. Heat Treating Unit
D. Metal Band Saw
E. Grinders
F. Radial Drills
G. Tool Grinders
H. Drill Presses
I. 12" Clausing Lathes
   14" Clausing Lathes
   18" Clausing Lathes
J. Shapers
K. Hydraulic Press
   Numerically Controlled Milling Machines with Tape Unit
L. Bench Cabinets
M. Vertical Milling Machines

N. Scales	1
O. Wash Basin	1
P. Filing Cabinets	3
Q. Desks	2
R. Work Benches	7
S. Bookcase	1
T. Stock Racks	2
U. Tool Shaper	1
V. Shelves	2
W. Tool Shelves	1
X. Layout Tables	1
Y. Milling Machines	5
Z. Hack Saw	1

Available Voltage 120 and 220



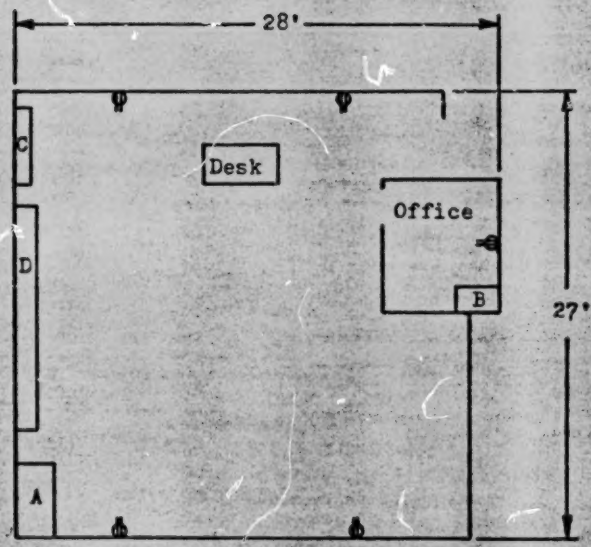
EASTLAND JOINT VOCATIONAL CENTER

FACILITIES LAYOUT

Scale: 1"=8'

Room Name T & I Classroom

Room No./Location 117 Total Area 712 Sq. ft.



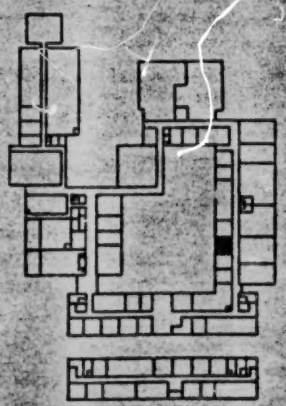
AREAS: (In sq. ft.)

Classroom	658
Office	54

FACILITIES:

Desks	1
Desk Chairs	25
Chalkboard	24'
Tackboard	20'
Chairs	1
A. Large Cabinets	1
B. Filing Cabinets	1
C. Magazine Rack	1
D. Radiator	1

Available Voltage 120



- The equipment or furniture could easily be stolen or removed to another room for uncontrolled use by other persons, thus causing either financial loss, difficulties in inventory control, or disruption of educational activities.
- The equipment or services pose a safety hazard to unauthorized and untrained users (e.g., welding machines or hoists in an automotive shop, or paper trimming and binding equipment in a printing shop).
- The laboratory or shop must be accessible to students frequently, but on an unscheduled basis for which the amount and timing of access cannot always be predicted and might in fact take place outside of usual class or office hours (evenings or weekends).
- The area is immediately adjacent to and always used with a shop, laboratory, clinic, or office used exclusively by an instructor/teacher or division/department for one of the above reasons, and access to one cannot be isolated from access to the other (e.g., a small recitation area separated from a cosmetology clinic area only by a movable partition).

When facilities that meet the above conditions are assigned to one or only a few users, you must follow definite steps, such as the following, to ensure that the conditions of the assignment are widely and thoroughly understood:

- The terms of the assignment should be recorded by means of an assignment form or a memo of record, clearly specifying the matters listed here.
- The duration of the assignment should be determined. In most cases this would be for at least a semester, quarter, or entire academic year, renewable upon annual inventory or inspection for as long as the same instructors/teachers are involved with the vocational instruction associated with the room and equipment.
- The particular room and the exact items of equipment should be established and listed.
- Access to the given space should be limited through the issuance of the appropriate keys, and the corresponding responsibility for pilferage and/or damage should be clearly stated in writing.

Of course, assigning facilities on a semipermanent basis raises some new problems, in addition to the loss of scheduling flexibility alluded to earlier. For example, several instructors/teachers might jointly use the same shop but need to segregate certain items for their exclusive use. This situation can be alleviated by issuing each instructor his/her own set of tools (e.g., drill bits, dental instruments, welding electrodes, dictating cassettes) and then providing a sufficient number of lockable cabinets to allow separate but convenient storage within the same room.

Another problem occurs when the primary user takes advantage of the facility by using "his/her room" for personal benefit. These abuses are

particularly tempting to the faculty or administrators having access to such useful facilities as woodworking tools, greenhouses, typewriters, copiers, computers and calculators, and movie projectors. Although the use of this equipment is regarded by many persons as an unwritten privilege of office, it usually constitutes an unwarranted diversion of public resources for private use. Therefore, it must be restrained, both by general institutional policy and through specific notations on facility use/assignment forms or memos.

Yet a third kind of problem can arise whenever a high-level administrator wishes to gain access to a special-use facility for a legitimate purpose (e.g., a safety inspection or a VIP tour) and uses a master key to enter the room. This practice obviously compromises the primary user's accountability for equipment loss or abuse, sometimes leading to the highly possessive tactic of using one's own combination padlocks. Far better would be an agreement that such access be gained only with prior notification and, preferably, in the company of the person to whom responsibility has been assigned. At the very least, the principal user should be notified after the fact and invited to assure him/herself that nothing was damaged or lost as a result of the visit.

Case-by-Case Assignment of General-Purpose Space

At the other end of the spectrum are facilities that are potentially useful to nearly everyone within the institution. These rooms or items of equipment possess few or none of the characteristics cited in the previous section. For example, a classroom having 40 movable tablet-arm chairs, a built-in projection screen, and no connecting doors to any other facility would be a prime example of a general-purpose facility, as would a 35mm slide projector mounted on a small cart.

In such cases, the room/equipment can most efficiently be utilized by assigning it to frequent users either (1) on a periodically scheduled basis (X teacher can use Y classroom for Z class every day from 9 a.m. to 10 a.m.), or (2) on a nonrepetitive basis as requests are received (the A committee uses conference room B along with movie projector C next Wednesday afternoon from 2 p.m. to 4 p.m.).

With facilities that are used by nearly everyone, these assignment practices can help you avoid the problems of quasi-ownership that occur with the semipermanent assignment of special-use facilities to only one or a few users. However, you encounter some new problems: (1) avoiding schedule conflicts, (2) maintaining the facility in good condition for the next user, (3) informing everyone involved about who is using what and when, and (4) deciding who should use which facility at any given time. (Some of these factors are also considered by the administrator who performs the scheduling function.)

Of course, not all general-purpose rooms or equipment are identical. Each has particular qualities that make it more suitable for some users than others. For example, a classroom might be furnished with movable tables and

chairs, making it particularly useful for conferences or classes that require students to work with large amounts of papers, books, or other materials. Other rooms might be equipped with tablet-arm chairs, which would be acceptable only for lectures, during which students only need to take notes or consult just one book at a time. If these chairs are fixed to the floor in a theater-style arrangement, it would obviously be difficult to break the class into smaller clusters for discussion or "buzz" groups.

Rooms also have different capabilities where audiovisual presentations are concerned. Obviously, it should be possible at least to darken the room with window shades or shutters. Even better is a lighting system equipped with a rheostat to allow gradual dimming of the room. Best of all is a facility having recessed spotlights that illuminate the writing surfaces without indirectly lighting the room and obscuring the view of the screen. In addition, it might be desirable to have a separate projection booth to insulate the sound of the projector. A large screen, or two or three screens, might be desirable for some modes of instruction requiring multimedia presentations.

In addition to the attributes of rooms, their locations also are important. Since many of the vocational education shops, especially those in the trade and industrial area, can generate noise or odors, certain activities should not be scheduled in classrooms that are near these shops. Pedestrian and vehicular traffic patterns should be observed, too, in order to avoid congestion or distractions when students go in and out of a room located next to others where classes are in session. Likewise, proximity to parking lots, restrooms, telephones, or food service and vending areas should be noted, especially when assigning evening classes or activities to rooms.

Assignable equipment has characteristics that must also be considered. Many items--such as projectors (slide, movie, filmstrip, overhead), tape recorders, and record players--are easily portable, or may be made so by installing them on a cart with caster wheels and an extension cord. Therefore, they can be stored in a central area or a closet in each building and carried/rolled to wherever they are needed. Other items--such as typewriters, large-scale mock-ups, chart/map sets, and driver's education simulators--although assignable to many users, are large and awkward to carry, or sensitive to damage and misalignment. They should be left in just one room, laboratory, or shop--the one to which the class or activity is then assigned.

Unless your institution has only one building and just a few faculty and staff members, the assignment of buildings and equipment should be recorded and formalized in writing. This process will be simpler and more routine than that involved in assigning special-use space, but many of the same items must be covered. Sample 2 shows just one of the many types of forms that could be used to cover this situation. You could devise or adapt your own form to suit your particular situation best.

Note several of the important items of information that are mentioned in sample 2. The room number, building, date and time of use, and name of user are all recorded. Also, the type of class, meeting, or activity is entered. Finally, the user is reminded of other types of coordination that must be

SAMPLE 2

ROOM ASSIGNMENT MEMO

To: _____

From: John Doe

Subject: Room Reservation

This is your confirmation that _____ has been reserved
(bldg. room)

for your use for _____ on _____.
(purpose) (day)

_____, from _____ to _____.
(date) (time) (time)

IMPORTANT NOTICE: It is your responsibility, and not that of my office, to attend to all other aspects of preparation of this room for your purposes. This memo only verifies that no other person has reserved the same room for this same time.

IN PARTICULAR, you are urged to attend to the following arrangements, where applicable: (Do not consider this list of suggestions as exhaustive; think about it!)

_____ Conduct "reconnaissance" to verify that this room is indeed suitable for your format, group size, AV equipment, whatever.

_____ Contact Alice Smith (AV technician) for projectors, carts, PA systems, films, and so on.

_____ Contact Jim Fish (building superintendent) for furniture rearrangements, registration table, trash barrels, special cleanup afterwards.

_____ Ask Dick Tracy (security coordinator) to provide access if you are using the facilities during the evening or weekends. In some cases, lights will have to be left on for your use.

_____ Notify the PBX operator and receptionists about your event if you expect off-campus persons to attend. My secretary can post the event on the directory board at your request to provide additional assistance to lost souls.

_____ Conduct a final check just before the event to assure that all items requested earlier have indeed been provided and that the room is vacant and ready for your well-planned event.

_____ After the event, generally clean and straighten up the room to approximately its original condition.

_____ (others)

_____

_____

carried out to obtain security, AV equipment, rearrangement of equipment, food service, and publicity. In this latter regard, the user should be cautioned not to publicize the location of the event until he/she is certain that the necessary facilities are available and have been reserved.

By providing the user with a copy of the room reservation form, the administrator has given a written confirmation that the facility has been assigned. Any other person or organization then found to be occupying the room in question, but not having such a form, clearly is doing so without authorization. The presence of this form quickly answers any questions concerning who is the rightful "tenant" and who is the "squatter," especially when the administrator is not on hand to resolve the conflict. Moreover, this will discourage groups from just situating themselves in any convenient, empty room, since they may soon be evicted by a legitimate user whose authorized use of the room may begin at the next hour.

Copies of this form might also be distributed to other interested persons, such as the receptionist who needs to direct visitors to the proper location, the custodial supervisor who needs to schedule an extra cleanup, the security coordinator who needs to unlock the room for evening and/or weekend use, and the publicity director. And, of course, a copy of the assignment form should be retained by the administrator or clerical person who makes or records the assignment. A similar procedure and form should govern the assignment of equipment, especially AV aids, from a central issue point (see sample 3).

It may be that the administrative staff of your institution is so small, or the duties are divided in such a way, that you perform all these duties yourself: custodial supervisor, security coordinator, publicity director--even receptionist. In such cases, it is obviously not necessary to prepare and distribute so many copies of the appropriate forms, but you should maintain some sort of checklist to remind yourself of all the tasks that need to be completed.

Utilization Records

After rooms or equipment have been used for a meeting, class, or other event, it is important that this use be recorded. Such records can be used to account for the way in which public funds are being spent. They can also reveal the need for additional facilities (in the case of heavy use) or a redistribution of resources (in the case of light or no use).

The file copies of the room-reservation and equipment-use forms are the primary sources of information for the records. The forms themselves can be retained for a short period of time (until the end of the year or other reporting period). Even more useful is a tabular summary of this information, including date, room/building, user, event, and attendance (for rooms); or date, user, event, number of hours of use, and cost of loss or damage (for equipment).

SAMPLE 3

EQUIPMENT REQUEST/USE FORM

Item requested: _____

_____

Quantity needed: _____

For: _____
(Activity/Class)

To be delivered to: _____ _____
Building Room

From: _____ _____
Time Date

To: _____ _____
Time Date

User: _____ _____
Printed Name Title

_____
Signature

Condition before use: _____

_____

_____

Condition after use: _____

_____

_____

You may wish to arrange through your resource person to meet with and interview an experienced administrator concerning his/her role in assigning space and equipment in a vocational education institution. Before the interview takes place, you should prepare a list of questions, such as the following, that you wish to have answered:

- What rules or guidelines determine if a room or item of equipment is assigned to one user on a semipermanent basis or is left in a pool of facilities to be assigned for use as needed?
- In what form does the administrator keep an inventory of the rooms and pieces of equipment that are assignable?
- How does the administrator retain a record of the assignment of facilities? Are these records summarized periodically into a report?

If possible, ask the administrator to take you on a tour of some of the facilities, pointing out some of the characteristics that might determine whether a room or item of equipment should be treated as a specialized, single-use facility or a general-purpose facility.

The following "Case Study" describes how a vocational education administrator assigned various rooms or items of equipment among the faculty and staff of her institution. Read the situation, and critique in writing the performance of the administrator described.

CASE STUDY

Vicki Andrews has been the director of business operations at Mill View Vocational School (MVVS) for four years. In accordance with a minor reorganization of duties proposed by the superintendent and adopted by the board earlier this summer, she now has responsibility for centrally coordinating the assignment of all facilities. Formerly, these duties had been performed separately by the heads of the various vocational service areas.

With the assistance of two student workers and the maintenance supervisor, Ms. Andrews first conducted a thorough inventory of all the rooms in the school's three buildings, noting their dimensions, student capacity, built-in and movable equipment, interconnection with other rooms, and primary designed function (e.g., shop, laboratory, clinic, lecture hall, office). Next, she completed a similar inventory of instructional aids and audiovisual equipment, employing the services of the curriculum and media director.

Here is an excerpt from the inventory booklet that was prepared as a result of these on-site inspections:

. . . . . .

Room 123: Carpentry shop for 20 students, 40' x 60' (2,400 sq. ft.), contains 7 major power tools (1 planer, 1 radial arm saw, 2 lathes, 1 band saw, 1 jointer, and 1 drill press), plus 12 power hand tools and many hand tools (see appendix for complete list). Has large double door to the outside, door to the corridor, and door to room 125.

Room 125: Drafting lab for 22 students, 20' x 40' (800 sq. ft.), contains 16 drafting tables with 30" stools, 3 folding 30" x 48" tables seating 2 students each, 6 stacking chairs, and a 24" x 42" desk. Has door to the corridor and door to room 123.

Room 128: Drafting lab for 30 students, 30' x 40' (1,200 sq. ft.), contains 30 drafting tables with 30" stools, plus 24" x 42" desk, 6' chalkboard, and 60" projection screen. Door to the corridor only.

Room 166: Classroom for 30 students, 20' x 24' (480 sq. ft.), contains 30 stackable tablet-arm chairs, 30" x 48" desk, plus two 6' chalkboards, 3' tackboard, and 60" projection screen.

This building contains a total of 20 rooms, 3 of them similar to room 166.

In addition, the following items of equipment are among those found in this same building:

- 35mm slide projectors (3), with 4"-6" "Zoom" lens and 10' power cord
- Filmstrip projectors (2) with 10' power cord and case
- 16mm movie projector (1) with separate speaker and 16' power cord
- Giant scale "drafting machine" (combined T square and protractor) capable of being mounted on track above chalkboard
- Audiovisual carts (4) on casters, 36" high, with 2 shelves and 30' power cord
- Projection screens, 60" square, portable, tripod mounted

. . . . . .

After reviewing all the facilities, Ms. Andrews made her assignment decisions, several of which follow.

She decided to assign room 123 (the carpentry shop) to the carpentry instructor, Tom Roberts, on a semipermanent basis. She told him this one day in July while he was in the building to pick up a power sander he was borrowing to prepare his boat for painting. She told him that he could pick up the key on the first faculty work day in August, and that he would be responsible for the security and condition of all the tools found in that room. He also would be responsible for the drafting lab (room 125), which is often used by carpentry students to prepare or review the plans for projects they were building. However, the drafting and electronics instructors would also have keys to that room since they used it for similar purposes, whereas room 128 was used primarily for entire classes of beginning and advanced drafting.

She decided that the giant drafting machine, a slide projector, and one of the projection screens would be left permanently in room 125.

She decided that room 128 would also have a slide projector assigned to it, and that this room would be scheduled out of the central (Ms. Andrews') office.

She decided that room 166 likewise would be scheduled and assigned by her office and would contain the movie projector, the filmstrip projector, and the third slide projector.

She decided that the scheduling or assignment of rooms 128 and 166, among others, would be handled in writing, either on the term/annual schedule of classes or on a special form. The latter form would be utilized for non-periodic or one-time uses of rooms or equipment. It would consist of a one-page sheet signed by her or her secretary and given to the person requesting the room. To save paper and file space, no other copies would be prepared or retained.

Compare your completed written critique of the "Case Study" with the "Model Critique" given below. Your response need not exactly duplicate the model response; however, you should have covered the same major points.

MODEL CRITIQUE

In general, Vicki Andrews used the correct approach to her task of coordinating the use of buildings and equipment, especially at first. Particularly commendable were (1) her initial step of determining just what assets she was concerned with (by means of the inventory), and (2) her cooperation with those fellow administrators (the maintenance supervisor and the curriculum/media director) who would potentially find the same information useful. The inventory that was developed was fairly complete, yet brief, and seemed to include the essential elements of information.

Not all of the criteria were followed, however, when selecting the basis on which to assign certain facilities. Her decision to give the responsibility and near-exclusive use of the carpentry shop to Tom Roberts was correct, since the large power tools located there are valuable, dangerous, and complicated to operate. However, he is not the primary user of the adjacent room (125); use of this room will be shared with instructors of other programs. Therefore, perhaps the responsibility for this room could have been assigned to the trade and industrial (T & I) director--assuming that the connecting door could be locked.

A similar approach (assignment to the T & I director) would be appropriate for room 128, which will likely be used by several T & I instructors, but by few persons outside that division.

Room 166 is clearly a general-use facility and was correctly kept as a centrally assigned room.

Concerning her approach to the assignment of AV equipment, it would probably work better if all the AV equipment were (1) stored in a central room, office, or closet in this building, and (2) loaned to users as required, under the supervision of the curriculum/media director's staff. The carts would facilitate the mobility of this equipment.

On the other hand, the giant drafting demonstration machine has a very specific use and could very well be assigned primarily to one particular room--perhaps 128--since this is where most primary drafting instruction takes place. In that case, the T & I director should be given the responsibility for this item of equipment, since he/she should have been given responsibility for room 128.

Ms. Andrews should have been more formal in her means of assigning facilities, especially in the case of room 125. In fact, the apparent use

of school equipment for Mr. Robert's personal purposes is an indicator that all the conditions of assignment for these valuable tools and facilities should be set forth in writing. Likewise, the form used for temporary assignment of space and equipment should have been prepared in at least two copies (one for the assignee and one for Ms. Andrews' files, as a resource for her end-of-term reports), with one or more additional copies being prepared and distributed to others who might need to know: next-door occupants, receptionists, custodial supervisors, and so on.

Level of Performance: Your completed written critique should have covered the same major points as the "Model Critique." If you missed some points or have questions about any additional points you made, review the material in the information sheet, "Principles of Assigning Space and Coordinating the Use of Equipment," pp. 9-20, or check with your resource person if necessary.

Learning Experience II

OVERVIEW

After completing the required reading, critique the performance of an administrator in a given case study in coordinating the use of facilities by two community organizations.

You will be reading the information sheet, "Policies and Coordination Steps Regarding Community Use of Facilities," pp. 29-39.

You may wish to observe how physical facilities are arranged and how accommodations and equipment are provided the next time you attend a conference or other event.

You will be reading the "Case Study," pp. 41-42, and critiquing the performance of the administrator described.

You will be evaluating your competency in critiquing the administrator's performance in coordinating community use of facilities by comparing your completed critique with the "Model Critique," pp. 43-44.

Activity

For information about how to develop policies concerning the use of buildings and equipment by community organizations, and how to coordinate and facilitate such use, read the following information sheet.

POLICIES AND COORDINATION STEPS REGARDING COMMUNITY USE OF FACILITIES

Most vocational education buildings and equipment are provided by public funds. In addition, many of them have unique qualities that make them useful to many community organizations. Thus, most state legislatures or departments of education have enacted permissive laws or regulations that allow educational institutions to open their facilities to public use. Institutions usually find it to their advantage to do so, since the increased public exposure is good for public relations--particularly useful whenever tax levies or legislative appropriations are being sought. Furthermore, this is also a way to keep the vocational programs before the attention of prospective students and employers of graduates.

However, the right of access to public facilities must be limited by board policy. Clearly, events of strictly commercial or narrow sectarian nature are not appropriate. Nor should the institution compete unfairly with private providers of common services (e.g., restaurants, hotels, athletic clubs) whose overhead expenses are not subsidized, who seek to earn a profit, and who must pay taxes. Their taxes, in fact, are part of the public fund support upon which the education institution depends.

Furthermore, the board policy, and the administrator's procedure for its implementation, must ensure that the facilities are used first and foremost for their intended educational purposes. Thus, scheduled classes; student activities; meetings of faculty, staff, board, and advisory committees; and other institution-related events must receive first priority. The subsequent opening of facilities to public use should be designed, then, to more fully utilize surplus space or vacant time periods. This lowers the average cost of the buildings and equipment for all users and gives the public greater returns on its investment. Moreover, the use of facilities by these outside organizations should not incur additional expenses for the institution. Whatever additional expenditures are involved should be passed on to the user as part of the rental fee or other charges.

Specific Provisions of a Community-Use Policy

The purpose of the policy statement adopted by the board is to give substance to the general principles of community use of facilities. In

particular, it should provide guidelines that would help the administrator make decisions about the following matters.

Eligibility. A list of organizations or events, whose nature and purpose is consistent with those of the institution, might consist of the following:

- Other schools or colleges within the same system, especially "feeder schools" for an area vocational school or the schools within a technical or community college's service area
- Nonprofit, youth-serving agencies or groups, such as 4-H, Scouts, and YMCA
- Community welfare or service organizations, such as United Way, Kiwanis clubs, Business and Professional Women's Club, and Cancer Society
- Governmental activities, such as regional or health planning council hearings, IRS information sessions, and highway safety programs
- Trade and labor unions, professional or business associations, and similar organizations
- Religious or political organizations (with scrupulous attention paid to equal time--or equal access--guarantees and to disclaimers of any institutional endorsement of partisan views or positions)

The common traits that should characterize eligible organizations or activities should be their not-for-profit nature, community-service orientation, and harmony with or support of educational goals.

Priorities and advance notice. Within the overall precept that the institution's facilities are provided first of all for in-house educational activities, the policy statement should specify the sequence in which prospective users should be given access to the facilities. The order in which the various groups were listed in the previous section on eligibility is probably quite similar to the priority arrangement that many boards or administrators would select.

However, just because a class or student organization has priority doesn't mean it can preempt or "bump" a previously scheduled community activity one or two days before it would have taken place. To avoid such conflicts, you should encourage faculty and staff to schedule institutional events as far ahead as possible. Many schools and colleges develop an annual calendar of major events, many of which happen at the same, predictable, or formula-established time every year (e.g., holiday parties, Vocational Education Week, DECA Week, vocational "Skill Olympics," graduation ceremonies). By tentatively reserving facilities or clearing certain time periods well in advance, you are then able to determine free periods when outside organizations will be able to use the rooms or equipment.

An additional method by which you can protect the interests of both parties and still honor the priority sequence is to specify a "cancellation

date." After this date has passed, a community organization can be assured that no school- or student-sponsored event will be able to claim preferred access to the reserved facilities.

Determination of fees and charges. As a starting point, you should develop, and the board should adopt, a schedule of rental charges and other fees for the use of various equipment and rooms of different sizes or purposes. Then the board's statement should cite those factors that may be applied by the authorized administrator to adjust these prices downward for appropriate cases. The fixed charges should be derived after considering the following variables:

- Size of room--Clearly, a larger room incurs more overhead costs for heating, illumination, maintenance, and furnishings. Also, these rooms are usually less numerous and therefore more likely to be needed for in-house purposes. Thus, a higher fee would make them less attractive and reduce the demand for them.

- Time of use--In order to stimulate the use of facilities during otherwise idle times (or conversely, to discourage use during busy seasons), the rates could be reduced for those rooms or items when classes are not normally in session (e.g., evenings, weekends, summer, between-semester breaks, holiday vacations). However, you need to be careful to avoid conflicts with periodic maintenance, remodeling, or extensive cleaning activities that often are also scheduled for "idle" times. Also, beware of certain services, notably food, that might not be available at these times.

  On the other hand, if the use of the facilities during certain periods of the year will increase the institution's direct costs (e.g., for heating/air conditioning, security, cleaning), then the rates should be raised or a surcharge should be added.

- Competitive situation--If a given facility is unique within the community or particularly suited for some type of activity for which there is a high demand, the institution could take advantage of this situation by asking a relatively high rental fee, and vice versa. However, you should be careful when applying this factor; the institution must avoid the appearance of trying to charge "whatever the traffic will bear."

This list of basic charges, once approved by the board, could be made available to prospective users through the administrator who coordinates community use of facilities. However, users should be made aware that the board and administration reserve the power to adjust (discount) those charges based on several applicable factors, such as the following:

- Clientele attracted to the institution--It is clearly in the best interests of the institution to welcome, through a greatly reduced fee, an organization or event that will bring to the school or campus prospective students, benefactors, or employers of graduates. Thus, a

college might seek to have high school proms, science fairs, or meetings of professional organizations held in its meeting rooms. A vocational school might invite trade unions, industrial councils, or youth recreation groups to hold meetings or workshops within its buildings.

- Nonprofit or educational nature of the event--Most public service organizations are equally short of funds and devoted toward the same goal of improving the community. The institution can assist them in their programs by making facilities available for only a nominal, easily affordable price.
- Reciprocal services--In many cases, the institution can waive charging a cash price, receiving rather some in-kind service in return. For example, a school might allow a National Guard unit to use its auditorium for large training classes at no charge. The soldiers, in return, might use their equipment to help the school construct a pond or an athletic field.

In addition to the fees and discounts, you must also consider other services that are needed by the community user and pass these costs on so as to avoid additional expense for the institution. For example, if the activity requires an additional cleaning of a room or area, these custodial wage costs should be billed to the user, using overtime rates if the person worked outside his/her usual hours. In similar fashion, the user should be asked to pay for security (perhaps provided by off-duty police officers), audiovisual operators, piano tuning, machine adjusting or maintenance, consumption of major supplies, and so on.

These additional costs should be estimated before the facility use is arranged. Then, after the event is over, a bill can be calculated based on actual use. Alternatively, the community organization could contract separately with security and AV personnel (provided these persons are acceptable to the administration) and pay them directly, saving the institution the costs of being a middleman in the transaction.

Preparing a Facility-Use Agreement

Every instance in which a community organization uses institutional facilities should be covered by a written agreement or contract (see sample 4). This practice sets a good businesslike atmosphere, facilitates record keeping, and ensures that all parties fully and clearly understand the rights and obligations of each. Among the provisions this agreement should include are these:

- Exact date and time of use, including earliest time the organization's members can have access to the facility for preparation, setup, or rehearsal; and the time by which the room must be cleared or the items of equipment returned
- Room(s) or item(s) of equipment involved, along with adjacent or supporting areas or items to which the user will be granted access at no charge, such as rest rooms, projection booths, and loading docks

SAMPLE 4

AGREEMENT FOR USE OF FACILITY

NAME OF ORGANIZATION _____

PERSON IN CHARGE OF ACTIVITY _____

ADDRESS _____ PHONE _____

DATE OF ACTIVITY _____ TIME: From _____ To _____

NATURE OF ACTIVITY _____

APPROXIMATE NUMBER OF PERSONS TO BE IN ATTENDANCE _____

ROOM OR ROOMS REQUESTED _____

FURTHER EXPLANATION IF NECESSARY (Include information such as need for AV operators and plans for cleanup, security, decorations, and outside entertainers)

_____

_____

_____

(continue on back)

FACILITY SETUP REQUIRED: (Indicate number)

____ Blackboard	____ Chairs	____ Screen
____ Lectern	____ Tables	____ 16mm projector
____ PA System	____ Piano	____ Slide projector

Other (Please specify): _____

CALCULATION OF FEES: (To be completed by institution officials)

Rental Fee $_____ Custodial Fee $_____

Miscellaneous Personnel Fee $_____ Other Fees $_____

Total Fee $_____

It is understood that our organization assumes full responsibility for the building and equipment.

SIGNATURE (person in charge of activity) _____ DATE _____

_____

APPROVED AND BOOKED ☐ DENIED ☐ REFERRED TO BOARD ☐

CHIEF ADMINISTRATOR _____ DATE _____

COORDINATOR/HOST _____ DATE _____

COMMENTS: _____

_____

_____

SOURCE: , Adapted from a form used by Eastland Vocational Center, Groveport, Ohio.

- Rental charges or fees after discount, itemized if applicable and showing the amount of discount (for public relations purposes)
- Estimated cost of other services to be provided on a pass-through-charge basis
- Deadlines for cancellation; for requesting special services, equipment, or arrangements; and for paying all invoiced charges
- Responsibility for maintaining cleanliness and orderliness, for maintaining security, for paying for damaged or soiled facilities, and for conducting only legal and appropriate activities on institutional property

The contract or other agreement form should be signed by authorized officials of both the institution and the using organization, and a copy should be provided to each.

Providing Facilities and Services for the User

Once you have been contacted by a community organization, you should first determine that (1) it is eligible to use your facilities, (2) the date is open, and (3) the institution has the rooms and equipment that meet its needs. Next, you will want to proceed with the arrangements in a way that will ensure that the user and all those persons attending its event will be served in a satisfactory manner.

The best way to assure this satisfaction is to devise and follow a procedure that methodically covers all the necessary steps in a logical order. A checklist such as that shown in sample 5 can be prepared and adapted for each separate use of the facilities. Note that it covers many of the same arrangements that are also involved when facilities are assigned to users within the institution. Let us look at several of these areas in greater detail.

On-site visit. This might be the first face-to-face contact between you (as administrator) and the representative of the user organization. It should precede the drafting of the facility-use agreement or contract. You can assist the user's representative by providing him/her at this time with a building floor plan, a map of the campus or school grounds, and a copy of the community-use checklist. These documents will preclude your overlooking anything important and will be a handy place to record notes and reminders.

By actually looking at the facilities to be used, the organization's representative will develop a better idea of how to arrange furniture, how to direct persons attending to the proper location, how many people will be needed to monitor or assist with the event, what additional decorations are needed, and so on.

The user might also wish to incorporate a version of the map or floor plan in its publicity. And speaking of publicity, you should at this time ask that your institution be mentioned in any publicity and specify the correct name to be used.

SAMPLE 5

COMMUNITY-USE CHECKLIST

____ On-site visit
- ___ Floor plan of building/rooms used
- ___ School/Campus map

____ List of services and equipment to be provided
- ___ Security provided by [user/institution]
- ___ Equipment operator provided by [user/institution]

____ Communication

Institution's contact persons:
- Before event _____
- During event _____

Using-organization's contact persons:
- Before event _____
- During event _____

____ Internal Notification
- ___ Custodial
- ___ AV
- ___ Security
- ___ Receptionists/PBX
- ___ Public relations

____ Publicity
- ___ Directory board
- ___ Sign

____ Final check by _____ date/time _____

____ "Host" present

Remarks:

____ Cleanup, checkout

____ Invoice sent

____ Payment received

____ Lectern

____ Microphone (lavaliere, long cord, gooseneck, hinged stand?)

____ Chairs on stage for speakers

____ Easel/Chalkboard

____ Risers (for standing or sitting participants?)

____ Acoustical shells

____ Music stands

____ Ice water for comfort of speaker

____ Theatrical-style lighting

____ Projectionist/lighting operator

____ Large projection screen

____ Proper arrangement of "teaser," header, and main curtains

____ Flags

____ Portable projection screen(s)

____ Projectors (on carts or in projection room?)

____ Other

List of services or equipment to be provided. Before the facility-use agreement is completed, you and the user's representative should also agree on exactly which items and/or services the institution will provide. Several of these are listed on the checklist shown in sample 5; these should be on the checklist used by the two of you during the on-site visit. Since some of the needed equipment must be reserved or set up beforehand (or rented by the user if the institution can't provide it), this is a very important step in preventing disappointment at the time of the event.

It is particularly important to agree on who--the user or the institution--will provide personnel to handle security, operate equipment, and control admission. The user might very well wish to hire or provide its own personnel. However, you must insist that these persons meet the institution's approval and that their names be provided to you in advance. If the institution provides these personnel, the user must be told the cost and advised that these charges will be included in the rental agreement.

Coordination of communication. How the event will be publicized and how visitors will be directed to the proper rooms or areas should also be discussed. Although this will be primarily the responsibility of the user organization, you might volunteer to post notices of the event in your in-house newsletters. This is a good way to advise faculty and staff of the presence of visitors, and to raise their awareness of how extensively the institution is interacting with the community. You might also agree to notify receptionists and post notices on free-standing or wall-mounted directory or menu boards (the kind with small white letters that fit into grooved black felt backgrounds). The institution might also be able to provide directional signs at the entrance to its premises, or else the user should provide its own. In the latter case, it will also be the user's responsibility to take these signs down after the event to avoid littering or defacing the grounds.

You and the representative of the user organization should also specify your respective contact persons, for both the planning stages and the day of the event itself.

Internal coordination. Armed with the knowledge of what the user organization needs, you should work with the audiovisual technician, the custodial supervisor, the security coordinator, the food service manager, the publicity director, or their equivalents (in some cases, you yourself might have many of these duties) to ensure that all these services and equipment will be present and operational at the time needed.

Final check. A few hours before the event, you or the event "host" (someone who attends the event as a representative of the institution) should review the checklist to ensure that everything is as it should be. The assigned room(s) should be physically inspected to personally ensure that everything is in place and ready for use, that the required doors are unlocked, and that the area is neat and clean. If not, the remaining time is available to make needed corrections.

Cleanup and checkout. Immediately after the event, you or the host should again inspect the facilities involved, preferably accompanied by a representative of the user organization. You should be looking for damage to buildings or equipment, excessive littering, or other problems; turning off equipment and lights; returning items to storage; and relocking doors as necessary. Such a mutual inspection will preclude any misunderstandings that might arise when the invoice is sent and will help both parties understand what changes should be made in the future to further guarantee satisfaction.

Attending the Event

Whenever possible, you or another administrator responsible for coordinating community use of facilities should be present or available during the event itself. If the timing or number of events makes this unfeasible, arrangements should be made for someone else to represent the institution, and this person should be introduced to the user organization's representative. The institutional "host" has two main responsibilities: to protect the institution's interests and property, and to make sure that the user is satisfied with the facilities, equipment, and arrangements. Therefore, he/she must be someone who makes a good impression with the public, has a cooperative attitude, is eager to please, and has the authority to direct institutional personnel and resources. In other words, this person must be someone who can unlock the door to the AV storage room, order a security guard to evict an unruly participant, or tell a custodian to clean up a spill, and yet present a charming welcoming speech in the name of the chief administrator.

This host needs several tools in order to carry out this assignment: a copy of the use agreement, a copy of the facilities/services checklist, keys for the rooms involved, and the names of contact persons within both the institution and the user organization. One of his/her first steps, in fact, is to introduce him/herself to the organization's chief personnel at the event and to introduce them to significant other institutional people who are present: custodial, security, food service, audiovisual, chaperones, athletic officials (if applicable), and so on. The host should also orient them to the room and surrounding areas, pointing out where telephones, emergency equipment, rest rooms, and service areas are located and explaining any applicable emergency procedures.

It is not necessary for the host to attend every moment of the dance, debate, science fair, or whatever. Once things are underway and running smoothly, in fact, the host could return to his/her office or other nearby location. However, the person in charge of the event needs to know how to summon the host if something more is needed.

As the event nears its conclusion, the host should be present and available to receive any comments, compliments, or complaints about the accommodations from those in attendance. He/she then can conduct the checkout that was described in the previous section.

Keeping Records

The records about community use of buildings and equipment can be maintained in at least two different forms: files and statistical summaries. As soon as each event or other facilities use is completed, the facility-use agreement and any important supporting documents--such as lists or diagrams of special arrangements and complimentary letters of thanks--should be placed in a current file in chronological order.

At the end of the year (school, calendar, or fiscal), semester, or other reporting period, these file copies can then become the bases for whatever statistical summaries are required. There are several possible ways in which these data could be listed or aggregated. A chronological master listing certainly would be convenient and could serve as a table of contents for the file, facilitating retrieval of any one contract. This listing would also show individual and total entries for date, organization, room, attendance, and fees charged. The events or other occasions of facilities use might also be grouped by type of organization, type of event, or type of facility used. The totals would be useful for purposes of comparison with previous years and could comprise the input for reports to the board or general public on the subject of how the institution serves the community. Both types of report formats are shown in sample 6.

SAMPLE 6

ANNUAL REPORT OF BUILDING USE BY COMMUNITY ORGANIZATIONS

CHRONOLOGICAL MASTER LISTING

Date	User	Event	Room	Attendance	Fee
Sept. 22	YMCA	Awards Dinner	SM 122	300	$25
Sept. 29	Acme, Inc.	Sales Meeting	JA 345	20	$15
Oct. 5	National Guard	Training	SM 125	150	NC
Oct. 5	United Way	Kick-off Dinner	SM 122	400	$75
		ETC.			
Annual Total		110 events		12,500	$3,560

SUMMARY BY TYPE OF ORGANIZATION

Youth	40 events	5,000	$450
Religious	5 events	400	$200
Governmental	9 events	2,000	$200
Commercial	22 events	4,000	$2,000
	ETC.		

You may wish to observe closely the conduct of an event in an effort to detect what apparent steps were involved in providing all the accommodations and equipment needed to assure the success of the event.

This event could be one in which you are a participant or planner (e.g., a professional conference held in a hotel) or one in which you are merely a spectator (e.g., a concert at a neighboring school or college). In either case, you might find it useful to use a version of a checklist (similar to that shown in sample 5) to record which services or items were needed. If you detect any slight problems or irregularities (for example, if the speaker could not be heard or the audience was uncomfortably warm), try to determine how this situation could have been avoided. It is also possible that you will notice things that were not on your checklist but should be.

The following "Case Study" describes how a vocational education administrator worked with two community groups that wished to use the institution's facilities. Read the situation, and critique in writing the performance of the administrator described.

CASE STUDY

It was early March, and Ralph McGregor, dean of community services and adult education at Swiftwater Community Technical College (SCTC), faced a dilemma. Not just two, but three groups wanted to use the college's combined dining/assembly hall during the third weekend of May. The date had been "on hold" for four months for the tentatively planned appreciation banquet honoring the college's various advisory committee members and the outstanding students in each program. Two community organizations also had requests pending for the same area at the same time. The Junior Achievement (JA) clubs in Rapid City, the nearby county seat, wished to hold a banquet and dance. In addition, the sales manager of Swiftwater Industries (and a fellow Rotarian of Ralph's) wanted to use the facility for a regional marketing rally, involving salespersons from three states.

Just that morning, the president had announced that the appreciation banquet would be rescheduled for early June, freeing the May date for community use. Consequently, Ralph had to decide which of the other two groups would get to use the dining room. He looked briefly at the policy statement he had drafted for the board's approval last year when he was assigned to coordinate the assignment of college facilities for both internal and community users. Along with the list of charges, general philosophy statement, and assignments of responsibility, he read the following list of eligible users, in priority sequence:

1. Schools or school-related clubs from within the college's service area
2. Nonprofit, youth-serving agencies or groups
3. Governmental agencies
4. Community service organizations
5. Labor unions or industries that provide placement for graduates or contribute materials, equipment, or consultants
6. Political or religious organizations

Mr. McGregor had estimated that the JA event would involve about 150 teenagers and that the sales meeting would bring 300 adults to the campus. (Meals can be catered by the college's own restaurant/hotel management classes.) Swiftwater Industries regularly hires 20-30 of SCTC's graduates,

and untold dozens more students work there part- or full-time while they attend school. Several of the firm's managers and engineers are on SCTC advisory committees.

Regarding most other things as being equal, Ralph decided to let Swiftwater Industries use the room, since their request preceded JA's by a week or two anyway. At the next Rotary meeting, he told Ron Thompson, the sales manager, to come over to the campus and they'd draw up the rental agreement.

During the visit, Ralph McGregor and his friend Ron toured the dining/assembly hall, and Ralph noted its various features: PA system, lighting controls, access to parking areas, nearby classrooms for individual sales meetings or displays, and so on. Ron had promised that his own office crew would clean up the debris, so Ralph decided not to bring up the matter of overtime custodial work and expense. Ralph wrote down all the furniture rearrangement needs and special audiovisual or security matters that came up, and told Ron to "just call me any time if you think of something else you'll need." Ralph then had his secretary draw up a contract for a rental change of $75, and he sent it with Ron for his controller to sign, saying that the college would probably knock another $25 off the charges before they sent the bill in June.

Over the next two months, Ron or his secretary often called the college with questions: "How long is the front wall of the room? Where can we unload our display cases? Can we serve wine with the meal? Is it possible to place that noisy projector at the back of the room instead of near the speakers' table?" (With respect to the last question, the AV technician said yes, but he would have to rent a 10" lens from the camera store for $15 per day.)

As the day of the meeting drew near, Ralph realized that he would have to be out of town for an AACJC workshop, so he asked his secretary, who lives near the campus, to drop in an hour or so before the mealtime to make sure everything was OK. The third-shift custodian was to be responsible for opening the doors.

When Ralph returned to his desk on the following Tuesday, several messages awaited him. The restaurant/hotel management instructor wondered why he hadn't been informed that the group had wanted doughnuts at its mid-morning coffee break; Ralph's secretary indicated that Ron Thompson had asked her to find and set up an easel with chart paper in each of the five classrooms, which she couldn't do; the custodial supervisor had discovered excessive litter in the corridors and, therefore, had to order the weekend man to work two extra hours to clean it up in time for classes Monday morning.

As he prepared the invoice to Swiftwater Industries for $106 ($75 rent, $16 for overtime custodian, and $15 for the lens rental), Ralph McGregor wondered whom the next call would come from--his (former) friend Ron Thompson, Ron's company's controller, or Ralph's boss.

Compare your completed written critique with the "Model Critique" given below. Your response need not exactly duplicate the model response; however, you should have covered the same major points.

MODEL CRITIQUE

Among the very few good things you can say about Ralph McGregor's performance is that he had a fairly complete policy to guide his operation--even if he didn't follow it. Also, he did prepare a facility-use agreement, and he provided an opportunity for the prospective user to visit the campus and view the facilities firsthand. Moreover, he recognized that institutional events had first claim on the use of facilities and didn't assign them for community use until the date was vacated through the postponement of the college function (the appreciation banquet).

Now for the problems. Perhaps the most glaring error is that Ralph was just too casual about the whole matter and let his friendship with the user's representative (Ron Thompson) prevent his following a more businesslike course of action. Based upon the college's priorities, in fact, Swiftwater Industries probably shouldn't even have received the preference for the use of the dining hall, but Ralph might not have been entirely objective in reaching his decision. As a youth-serving group, the JA clubs fit into priority class two, whereas a commercial firm--even a good supporter of the college such as Swiftwater Industries--is in class five. Moreover, the JA group was local, whereas the sales force came partially from outside the college's service area--indeed, outside the state. The industry would also be better able to afford to rent similar private facilities. And finally, the JA organization could be considered to be a group of highly likely college prospects interested in the programs of SCTC.

During Ron's visit to campus, Ralph should have used a checklist or other methodical system for suggesting and recording the accommodations needed by the user. This would have prevented many of the phone calls later, as well as the last-minute request, which his secretary couldn't handle, for easels. Ralph should have sent memos to all those affected by the rental, especially the food manager, the custodial supervisor, and the AV technician. And he should have prepared a contingency estimate of the cost of overtime custodial help and warned the user that any extraordinatory expenses (the special projector lens) would be passed on.

Finally, Ralph should have attended the event himself or else selected and briefed his substitute more carefully--making sure that most last-minute details were already settled and equipping his stand-in with the knowledge, documents, keys, and so on, needed to cope with unexpected problems.

Level of Performance: Your completed written critique should have covered the same major points as the "Model Critique." If you missed some points or have questions about any additional points you made, review the material in the information sheet, "Policies and Coordination Steps Regarding Community Use of Facilities," pp. 29-39, or check with your resource person if necessary.

Learning Experience III

OVERVIEW

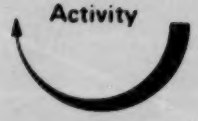
After completing the required reading, analyze a given equipment-and-supply inventory procedure, and recommend additional or corrected elements for that procedure.

You will be reading the information sheet, "Characteristics of an Effective Inventory System," pp. 47-56.

You may wish to interview a vocational education administrator to determine how he/she organizes and operates an inventory system.

You will be reading the "Case Situation," p. 57, analyzing a given inventory procedure governing supplies and equipment, and providing additional or corrected elements for that procedure.

You will be evaluating your competency in analyzing and correcting a given inventory procedure by comparing your completed analysis with the "Model Analysis," pp. 59-60.



For information about why it is important to have an inventory system for the supplies and equipment involved in vocational education, and how to establish and maintain such a system, read the following information sheet.

CHARACTERISTICS OF AN EFFECTIVE INVENTORY SYSTEM

An inventory of supplies and equipment for a vocational education institution is quite similar to the records of your personal checking account. Before you as an individual can make decisions about how to assign or distribute your personal finances, you need to have an accurate and current record of just how much money you have. As you disburse your hard-earned dollars, you want to keep track of where they went, and after they are gone, you need to be able to look back to make sure none of your assets have disappeared. Likewise, before you as an administrator can decide how to allocate educational materials, you need an accurate record of how many you own. As you distribute them, you must record where they went, so that later you can locate them or detect losses.

The need for a comprehensive, accurate, and usable inventory is alluded to many times in this series of modules, as well as in many conventional texts and other publications about educational business administration. Inventories are essential to the success of accounting, budgeting, and insurance operations. They must be kept when funds from external grants, contracts, or gifts are used to purchase capital items. They are necessary to establish--and prove--the amount of loss from fire, accident, or theft, and they can be used to determine if security systems are successful. Finally, an inventory is the final link in the "purchasing cycle," not only showing what the funds were expended for, but also indicating when a piece of equipment is old enough, or a stock of supplies has been depleted enough, that action to purchase new items is needed.

Because of the frequent, but sketchy, references to inventory practices in other writings, it will be beneficial for us to cover the subject here in more deliberate detail. Let us examine closely, then, these aspects of an effective inventory system: (1) the reasons to maintain one, (2) the ways to establish one, (3) the forms and procedures involved, and (4) alternative ways to maintain inventory records.

Before proceeding further, perhaps it would be helpful to pause to differentiate between the two terms appearing often in this information sheet: supplies and equipment. The following criteria appear in the procedures manual of one vocational education institution and probably represent most administrators' understanding of these terms. However, your state may define these terms differently. Check to be certain.

Criteria for supply items. A supply item is any article or material that meets any one or more of the following conditions:

- It is consumed in use [paper, rubbing alcohol, soap].
- It loses its original shape or appearance with use [drill bit, pencil, typewriter ribbon].
- It is expendable; that is, if the article is damaged or some of its parts are lost or worn out, it is usually more feasible to replace it with an entirely new unit rather than repair it [manual pencil sharpener, oral thermometer].
- It is an inexpensive item--having otherwise the characteristics of equipment--whose small unit cost makes it inadvisable to "capitalize" the item [waste basket, stapler].
- It loses its identity through incorporation into a different or more complete unit or substance [welding rod, paint].

Criteria for equipment items. An equipment item is a material unit that meets all of the following conditions:

- It retains its original shape and appearance with use [welder, typewriter].
- It is nonexpendable; that is, if the article is damaged or some of its parts are lost or worn out, it is usually more feasible to repair it than replace it with an entirely new unit [electric saw, dental hygienist's handpiece, file cabinet].
- It represents an investment of money that makes it feasible and advisable to capitalize the item [van, kitchen range].
- It does not lose its identity through incorporation into a different or more complete unit or substance [snowplow mounted on lawn-and-garden tractor, X-ray film-developing tank].[2]

As a rule of thumb, then, items of equipment are of high individual value--usually distinguishable one from the other (if by no other means than a serial number)--and therefore worth the cost and effort of individual accounting. Conversely, supplies are of minor value, and it is convenient to refer to them in terms of quantity or bulk amount. Nevertheless, the loss of many "minor" supply articles can still result in a major financial loss.

For an accountant, equipment is depreciated, while supplies are not. For an insurance coverage planner, equipment assets are listed and appraised individually; supplies are not. For a teacher or department head preparing a budget, equipment purchasing plans might be specified, whereas supply needs are probably expressed only in terms of dollar value in broad categories. And for

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2. "Facility Use Handbook," (Groveport, OH: Eastland Vocational Center, 1975), p. 11.31.

a purchasing manager, equipment requisitions usually lead to written price quotations, bids, and/or board approval of the purchase, whereas supplies are often bought from a standardized list, on an annual contract, from a long-standing vendor.

In like fashion, the methods and procedures used by the administrator preparing the inventory vary, depending on whether the object of the inventory is an item of equipment or a stock of supplies. Regardless, these inventory practices should also support the work of the accountant, insurer, purchaser, and so forth.

There is one other distinction, which may have occurred to you also, between equipment and supplies on the one hand, and buildings and rooms on the other. In the latter case, a "space" inventory is appropriate and is equally crucial to the success of assigning and administering that type of physical facilities.

Reasons to Maintain an Inventory System

In the press of other compelling administrative duties, it would be tempting and expedient to say, "Why bother with inventory? If we've got an item, it'll turn up some place. If it's gone or lost, no silly little number will help us find it." This attitude is understandable, but it might be altered if you consider the following implications.

An inventory is an adjunct to accounting records. Without an inventory of equipment and supplies, accounting summaries would not fairly represent the financial status of an institution. Low-cash bank balances early in the year are more readily understood when one notes inventory records showing that a large stockpile of educational supplies has been acquired. On the other side of the coin, the budget status report for a grant-funded program might show severe underspending near the end of the grant period, until an examination of the inventory revealed that several items of equipment had not yet been received (or paid for) by the institution. By monitoring inventory records side by side with conventional cash reports, you can balance the distribution of assets between the more "fluid" cash form and the less flexible equipment/supply form, either accelerating or deferring purchases to affect this balance as required by the institution's cash flow position.

In the case of equipment, inventory records also reflect the age and initial value of items, thus allowing the computation of depreciation and current value of these assets, further refining the accuracy of the institution's "books."

An inventory supports insurance planning and records. Without some notion of just how much property your institution owns, it is impossible for you to purchase the correct amount of insurance protection or to determine how extensive the institution's "risk management" program must be. In fact, most insurance underwriters will insist on having some sort of inventory as a supplement to their contracts and policies. This inventory provides them with

information about not only the age and value of equipment/supplies, but also its description and location. Moreover, this same information will be needed as proof of loss in case of larceny, disaster, mysterious disappearance, and so on.

An inventory provides for accountability of public resources. Nearly all materials used by vocational educators were purchased by public funds, whether arising from state and local taxes, legislative appropriations, or federal/state grants and contracts. All citizens, acting through the agency of their lawmakers and bureaucrats, have the right to know what their dollars have purchased and in what condition those materials are being maintained. At the school/college level, the administrator transforms this lofty ideal into the everyday terms of "OK, now who has thingamajig #3 today, and is it still serviceable?" By placing a "tag" on valuable pieces of equipment (literally, in many cases), you can indeed retain information on, if not control of, their whereabouts and that of other items. This is especially important in the case of such items as tool sets, instruments, and manuals, which are issued to students for the duration of a course and then returned.

An inventory assists the purchasing office. Have you ever noticed that peephole near the bottom of the paper tissue box, or the reminder in the October pages of your desk calendar? These devices are designed to trigger the timely reordering of dwindling supplies or obsolescing "equipment." Being located on the very item that needs to be repurchased, they also make it likely that the buyer will procure the identical item the next time and will have an approximate idea of its cost. ("Let's see; the end panel of this Kleenex box says 8" x 9", 2-ply tissues, 300 count, and the price label says 99 cents.")

A good inventory system is a similar aid to the purchasing manager, and more. By correlating an item of equipment or a stock of supplies with his/her purchasing records--through inventory controls--this administrator will also be able to discover what vendor sold the tissues and how long ago they were purchased. Maybe they were consumed faster than expected, so the order should be doubled. If they have been around for a long time, perhaps the ordered amount should be reduced to conserve warehousing storage space and effort.

An inventory helps detect premature depletion or extraordinary losses. By requiring a periodic review of equipment location and condition or supply levels, an inventory program can reveal that items are missing or that supplies are running critically low. It's obviously better to discover this early enough to take corrective action, rather than at the instant the item is needed. (Have you ever burned out the last projector bulb while making a presentation to a group of community VIPs? Enough said.)

Not only should the administrator, teacher, or other responsible person act to replace the item or replenish the stockpile, but he/she should be prompted to ask why the shortage occurred. Are the buses burning oil? Are the welding students getting careless with rods? Is somebody taking typing paper home to the family? Do these new-style tape dispensers break more

easily? Has some sneak thief been taking unattended tape recorders from classrooms?

In the event that a piece of equipment has actually been misplaced, discovering the loss during a routine inventory update might make it easier to find it. It's usually less difficult to locate a lost snow shovel during summer inventory than it is early on the morning of the season's first snowstorm, just as it is somehow easier to find a loaned-out camera any day except the day you want to record the governor's surprise visit.

Ways to Establish an Inventory System

Many of the steps involved in developing and implementing an inventory procedure are identical to those used for establishing any administrative or managerial practice. Briefly, you as an administrator should study the current situation (including the methods now in use), applicable board policy and state law, and the resources available. It is especially important to identify the people that would be involved or affected by the proposed procedure. In fact, you should strive to consult with these persons from the outset, since it is their cooperation, understanding, and enthusiasm that will be essential to the success of the program. Once alternatives have been considered and a particular set of procedures adopted, you should then fully describe the procedure in writing, perhaps issuing a short manual of instructions and preparing samples of all those forms that need to be completed during various phases of the program. Finally, you should spell out the inventory duties and responsibilities of everyone in the institution--from the board's clerk treasurer to the lab/shop assistant, including the purchasing manager and the department/division heads.

Specifically, the inventory procedure should address the following points: what, how often, and who.

What items must be inventoried? Part of this answer hinges on the difference between equipment and supplies described earlier. Actually, nearly everything an institution owns will be subject to some type of accounting during its use, but detailed records would be maintained only on pieces of equipment (listed by serial number) of significant value (perhaps $100 or more) or long life expectancy (one or more years). Remaining materials would be recorded only in terms of quantity or amount.

How often are inventories conducted? Clearly, if the staff and faculty spend all their time counting tools, desks, and paper, they'll never have an opportunity to use them in the important educational process for which they were intended. Therefore, the periodic checking and updating of inventory records should be conducted only as often as needed to accomplish the purposes explained previously. In fact, the frequency of inventory action should vary, occurring more often for high-value or frequently moved items, and less often for built-in machinery or inexpensive classroom furnishings. However, a thorough inventory should be conducted annually, timed to occur during slack

times or whenever it best fits in with the preparation of annual financial reports.

Who participates in inventory actions? Everyone who is assigned the use or care of equipment or supplies should contribute to the process, if only by annually verifying that he/she still has the items and that they are still in serviceable condition. Beyond this, there should be one person assigned to coordinate annual inventories and serve as a clearinghouse for information. This coordinator would devise needed forms and keep the records up to date. The purchasing manager and business officer are both key contributors and the primary consumers of inventory information, so they will often be involved too. Finally, any person who operates a central warehouse or supply room will almost constantly be involved in monitoring levels of stock.

Forms and Procedures for Operating an Inventory System

In order to understand how an inventory system works, let's first follow an item of equipment (a typewriter) through the process from acquisition to disposal. Later, we will likewise follow a set of supplies through similar actions.

Equipment inventory system. Assume that a business education instructor orders a typewriter for classroom instructional purposes. After the necessary budgeting and bidding steps are completed, the machine finally arrives. When the shipping box is opened at the loading dock, the receiving "staff" (in this case, the building's chief custodian) matches the item with his copy of the purchase order and posts the following information from that document onto an inventory card (see sample 7): short description, model number, serial number, purchase price, date of receipt, vendor's name, and purchase order number. He also notes who the item is delivered to (the instructor who ordered it, Mr. Reynolds), and when. Finally, the chief custodian affixes an inventory sticker (or stencils a number) on the typewriter at a standard place (lower left corner of the back) and records this number also.

Mr. Reynolds accepts the typewriter, notices that the inventory sticker has indeed been applied, records this number and other information on a list he keeps, and immediately begins to use the machine in class. The following summer, he receives a list of all the items for which he is responsible, including this typewriter. He checks the contents of the classrooms he uses and finds the typewriter still present and in very good condition, which he reports. Later in the year, during an audit by the state agency whose grant had supported the purchase of the typewriter, a random check of applicable inventory numbers again requires Mr. Reynolds to locate the machine. In fact, this time he is asked to physically show the machine to the auditor, who double checks the inventory number against the record card.

Three years later, an administrative reorganization creates an urgent need for a typewriter to be used by a new secretary. Since Mr. Reynolds' classes are smaller than usual, and typewriters of a new design are on order,

SAMPLE 7

EQUIPMENT INVENTORY RECORD

IDENTIFICATION NUMBER: LTC 1063

DESCRIPTION (TRADE NAME, MODEL, SIZE, SERIAL NO., ATTACHMENTS, ACCESSORIES, ETC.)

ELECTRIC TYPEWRITER, IBM CORRECTING SELECTRIC II, BX 1253A3, CORAL, WITH SOUNDPROOFING KIT

COST DATA

INITIAL COST	$ 825
FREIGHT	25
INSTALLATION	—
TOTAL COST	$ 850

DATE RECEIVED	PURCHASE ORDER NO.	VENDOR
8/3/78	AV-63219	NORTHWEST ACADIAN OFFICE, IBM CORP.

LOCATION RECORD - TRANSFERS

DATE	ISSUED TO	LOCATION	INITIALS	DATE	ISSUED TO	LOCATION	INITIALS
8/8/78	Rea Reynolds	Bus/Off Lab - Room 123	RR				
7/9/81	Suzi Shin	Counselors' Office Room 404	SS				
6/12/85	TRADED IN	(VALUE ALLOWED - $250)	CD				

this particular machine is reassigned to the new person. When the chief custodian arrives to move the machine, he and Mr. Reynolds again compare inventory and serial numbers with those shown on the card, and they briefly note that the case is dented and the shift lock sometimes sticks. The card is then altered to show that responsibility has been transferred from Mr. Reynolds to Ms. Shin, the new typist.

Finally, four years later, the typewriter wears out and is traded in for a new one. This disposition is recorded on the card, which is then placed in an inactive file.

Supply inventory system. Supplies are inventoried in a different fashion. In this case, we will observe what happens with typewriter ribbons. When a shipment of two cases arrives, the central stockroom clerk, Alice Long, verifies the count and posts some of the same purchase order information onto a stock control page (see sample 8) instead of a card. She doesn't need to bother with an inventory sticker, and of course, no serial numbers are to

SAMPLE 8

STOCK CONTROL RECORD

ANYTOWN VOCATIONAL INSTITUTE

Item Description: Typewriter ribbon, mylar, black, IBM cassette

Date	Purchase Order No.	Value	Vendor/User	Quantity		
				Received	Issued	On Hand
1980	—	$2.30 each	JUNE 30 INVENTORY	—	—	40
8/12	A-1543	$480.00	Acme Office Supply	(2 cases) 192	—	232
9/1	—		Business/Office Dept.	—	20	212
9/5	—		Sally Jones	—	1	211
9/8	—		Faculty Typing Pool	—	8	203
9/18	—		Sally Jones	—	1	202
10/3	—		Sally Jones	—	1	201
10/15	—		Faculty Typing Pool	—	7	194
. . . .			. . . . .		. . .	. . . .
5/12	—		Faculty Typing Pool	—	5	92
5/23	—		Sally Jones	—	1	91
6/15	—	$2.50 each	INVENTORY - ACTUAL COUNT	—	—	87

be found. Instead, the new arrivals are added to the quantity on hand and reflected in the running-total column.

Throughout the academic year, these ribbons are issued--18-20 at a time to the business education department, 6-8 at a time to the head of the faculty typing pool, and 1 about every week to the chief administrator's secretary, who presumably has no room to keep more ribbons on hand. These distributions are recorded on the sheet.

In June, the stockroom clerk is asked, along with everyone else, to inventory her supplies so that the purchasing office can determine how much to order for the next year. She physically counts the ribbons on her shelves and notices that the count differs from the running total by only four. Since this represents a value of only $10, the discrepancy is not significant enough to suspect any pilferage. More likely, she simply forgot to post a transaction or two during the year. She reports the actual number present and corrects the running total accordingly.

What is significant to her is that the number on hand is a great deal higher than that noted one year earlier. This could have occurred because the users did not replenish their desk-side stocks (to reduce their own inventorying chore, perhaps?), or it could be that consumption is indeed down--the new ribbons last longer, classes are smaller, fewer letters and reports are being

written, or whatever. At any rate, she calls attention to this fact, and the purchasing manager will decide what action to take after he/she has also examined the inventory reports from the typewriter ribbon users.

Alternative Inventory Systems

Not every institution will use the same type of inventory procedures to maintain accurate records of the location, value, and condition of its supplies and equipment, nor will their procedures resemble the ones just described in every respect.

For example, some administrators will choose not to assign a separate institutional inventory number to those pieces of equipment already having a unique, manufacturer-engraved serial number. Instead, they might choose to affix only some type of label prominently stating "Property of Anytown Vocational School--Do Not Remove." Indeed, such labels could even be affixed to items of relatively little value (e.g., wrenches or slide projector trays) that are not assigned to particular users. Others may use numbers, but they will stencil or etch them on, or use the etching tool to enscribe a distinctive mark showing institutional ownership.

In the case of smaller institutions, there may not be a central storage area of supplies and, thus, no need (or way) to constantly monitor stock levels. For them, the annual inventory is especially important to ensure that appropriate amounts of supplies are placed on a consolidated order for the coming year.

In still other cases, equipment may be color-coded or marked in freehand with a felt-tip marker with a room number or department name to show where it belongs. Even less formally, the expectation may be only that the contents of a room, shop, or laboratory be checked and restored to the prescribed stockage level or floor plan every term or semester--a kind of I-don't-care-which-desks-just-so-you-still-have-25-of-them-by-Christmas policy. The obvious weakness in this course of action is that it encourages a "floating inventory" in which Peter is robbed to pay Paul, and actual shortages can be neither detected nor blamed on any one cause or perpetrator.

At the other end of the spectrum is a completely computerized inventory. One vocational school, which owns about $2 million worth of equipment, paid approximately $8 thousand for an outside inventory service to create inventory records for them. Then, for a smaller annual fee (around $1 thousand), the service produces computer printouts of where the equipment is supposed to be, and the faculty and administrators use these printouts as worksheets during an annual check. New acquisitions are reflected on input cards sent to the service by the school's purchasing office. The greatest advantage of this method is that it allows administrators to secure summaries of different categories for various purposes (e.g., a listing of all typewriters, the current location of all items bought by federal grant X, the current value of all items purchased in 1975, or the status of everything assigned to the trade and industrial program).

Whatever the system, it is important for the administrator who designs or enforces it to keep in mind the principal reasons for keeping these kinds of records--namely for accounting, assignment, insurance, accountability, and purchasing purposes. The choice of the exact method for doing this depends on the amount of material to be inventoried, its mobility, and the time and persons available to perform it. At the minimum, it should consist of some way to show the acquisition of new items, a means of showing equipment transfers or issuance of supplies, annual updates, and some record of property disposal. When done correctly, you will feel confident of your ability to inform the taxpayers about where and how their funds are being spent.

You may wish to arrange through your resource person to meet with and interview an experienced administrator concerning his/her role in designing and/or operating an inventory system within a vocational education institution. Before the interview takes place, you should prepare a list of questions, such as the following, that you wish to have answered:

- What items are covered by the inventory system? Are some of the more valuable pieces of equipment handled differently (i.e., by serial number or inventory tag) from the supplies?
- What forms and records are maintained as part of this system?
- Which individuals have roles in the inventory system? How do they differ?
- Has he/she investigated or implemented a computer-based or computer-assisted inventory system? If so, what advantages or disadvantages does he/she think are involved?

The following "Case Situation" contains a brief description of an institution's inventory procedures. Read the description, and identify any deficiencies that you believe exist. Correct these errors either by providing improved methods or adding those procedural steps that have been omitted. (You can make these changes in the margins or on a separate sheet of paper.)

Remember, this is a hypothetical, not necessarily an ideal, set of procedures.

CASE SITUATION

You have a choice. You may assume the position of a chief administrator who is considering the acceptability of a draft of proposed inventory procedures just presented to you by the chief business officer of your institution. Or, you can take the role of a new business officer who has recently joined an institution and is now reviewing the current inventory procedure to determine what, if any, revisions should be made. Here is what you have:

Preamble: Since Holiday Hills Vocational School (HHVS) is blessed with over $4 million of the finest and most recent equipment and educational aids available, it is imperative that we keep it under control at all times. To this end, the following inventory control procedures have been established, and it is the equal responsibility of everyone to follow them.

Forms: Each item of equipment will be recorded, immediately upon delivery, by the division or teacher that ordered it, using a card with these headings: make, model, color, serial number, size, and user's name.

Transfers: Whenever an item is reassigned to another user (e.g., teacher, administrator, secretary, or student), this will be noted on the card, and the card will be transferred to the new user also.

Periodic Updating: All faculty and staff will prepare an inventory report on the last working date of each month, providing information in two columns--the left column showing the name and assigned number of each type of equipment for which the individual is responsible, and the right column showing the number actually present. The reports will be submitted through channels, and all discrepancies, regardless of size or dollar amount, must be explained. (Note: The audiovisual coordinator is responsible for checking all AV equipment, regardless of location throughout HHVS's four buildings.)

Applicability: This inventory applies only to items of equipment (i.e., nonconsumables) having a value of $10 or more, including folding chairs, athletic equipment, and in-stock repair parts for school vehicles.

Compare your written corrections and additions to the procedure described in the "Case Situation" with the "Model Analysis" listed below. Your responses need not exactly duplicate the model responses; however, you should have identified and corrected errors of the same general type.

MODEL ANALYSIS

The procedures are described in a terse and organized manner. However, many key provisions have been omitted, and errors have been made on both ends of the continuum--too strict on the one hand, and too vulnerable to error on the other.

To begin with, the preamble reflects a commendable interest in property accountability, but fails to mention that inventory information is also useful to the faculty and administration in making management decisions about purchasing, insurance, security, finance, and so on.

Responsibility, when assigned to "everyone," too easily becomes the concern of no one. A specific coordinator of inventory operations and records should have been appointed.

The form in use is fine, as far as it goes. However, it would be much more useful if it also called for a listing of the date acquired, vendor, purchase order number, and cost.

The section on transfers properly calls for a notation of transfer to be made on the record. However, having only one copy of the card (the one in the user's possession) provides no control at all. If the item is lost, could not the card get "lost" too?

The requirement for monthly accountability is extremely burdensome; so, too, is the need to account for every little error and to submit the reports through channels. Only significant shortages should be noted and reported to one's supervisor. The routine "all-present-and-accounted-for" lists could go directly to the inventory coordinator for totalling and compiling.

Instead of monthly updating, an annual report would probably be sufficient, and at that time, all the AV equipment could be recalled to one location, making the counting easier and also centralizing the chore of maintaining it.

Notably absent from the applicability section is supplies. In fact, the monitoring of the stockpiles of such things as paper (no one sheet of which costs very much, but all of which nevertheless represents a big expense for the school), fuel, cleaning supplies, and student materials would probably be cost-effective. The same could not be said for by-number tracking of such relatively trivial items as folding chairs, basketballs, or garbage cans.

One is just like the other, and they are intended to float as needed from one area to another. In this case, simple quantity counts are a more economical alternative.

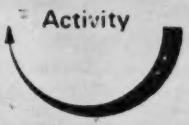
Also absent are any instructions about the actions to take when an item is to be dropped from the inventory, whether by selling it as surplus, scrapping it, trading it in, or losing it to theft, fire, or calamity.

Level of Performance: Your corrections should have dealt with most of the same errors, and corrected them in approximately the same way, as was done in the "Model Analysis." If you missed some of the errors or have questions about any additional points you made, review the material in the information sheet, "Characteristics of an Effective Inventory System," pp. 47-56, or check with your resource person if necessary.

Learning Experience IV

OVERVIEW

After completing the required reading, analyze a given description of a buildings-and-equipment preventive maintenance program, and recommend additional or corrected elements for that program.



You will be reading the information sheet, "The Elements of an Effective Preventive Maintenance Program," pp. 63-71.

You may wish to interview a vocational education administrator or maintenance supervisor to determine how he/she organizes and operates a preventive maintenance system in either an educational institution or a business or industrial firm.

You will be reading the "Case Situation," pp. 73-74, analyzing a given maintenance program, and providing additional or corrected elements for that program.

You will be evaluating your competency in analyzing and correcting a given maintenance program by comparing your completed analysis with the "Model Analysis," pp. 75-76.

For information about how to plan, organize, and operate a preventive maintenance program, read the following information sheet.

THE ELEMENTS OF AN EFFECTIVE PREVENTIVE MAINTENANCE PROGRAM

The facilities of modern secondary and postsecondary educational institutions contain elaborate and expensive equipment. Administrators and instructors must ensure that the buildings and equipment are kept in top condition for student use. To accomplish this, educational officials must provide a functional maintenance plan for buildings and equipment--one that includes a preventive maintenance program, as well as contingency measures for major and minor breakdowns.

A good maintenance program should be planned and organized in the same way as any other activity, and thus, consideration should be given to at least these five strategies:

1. Develop effective procedures to cover all maintenance activities.
2. Formulate schedules to cover repetitive operations, such as lubrication of machines, cleaning of windows and lighting fixtures, and disposal of scrap.
3. Establish a procedure for handling nonrepetitive jobs, such as repairs or installation of machines.
4. Arrange to have frequently needed spare parts on hand or readily available for equipment repair.
5. Develop a follow-up and supervision system to assure that procedures and schedules are followed.

Elements of Preventive Maintenance

Preventive maintenance may be described as an orderly, uniform, continuous, and scheduled procedure, which is designed to prevent breakdown and prolong the useful life of equipment and buildings. There are two basic types of preventive maintenance, as follows:

- Day-to-day maintenance--The best way to ensure that tools, equipment, and physical facilities stay in mint condition is to keep them that way on a daily basis. This means regularly oiling machinery, disposing of scrap (e.g., sawdust and filings); checking the condition of tools; keeping the area around machines or vehicles clean; checking fluid levels; checking the tightness of shafts, belts, chains, and bolts; aligning and sharpening; and similar activities. It means using equipment and tools correctly and leaving them in good condition when you are through using them. This type of maintenance is intended to

preserve the status quo--to ensure that tools, equipment, and physical facilities in good condition remain that way as long as possible through careful use.

- More substantial, periodic maintenance--Despite the most thorough day-to-day maintenance, problems will develop--the furnace, the word processor, the milling machine, and the electric mixer will break down. To avoid having this happen, insofar as possible, a program of regular inspections and overhauls should be planned. Think, for example, of your automobile. If you have a deteriorating fan belt, it will have to be replaced one way or the other. Without periodic inspections, this problem could go unnoticed until the belt actually breaks (usually at 2 a.m., with no gas station or phone for 20 miles). By making periodic inspections, you can spot the problem, and correct it, before it is too late.

Day-to-day maintenance basically costs little but time, and that is time well spent. Inspections and overhauls do involve additional costs, however. To determine if these costs can be justified in the case of particular tools, equipment, and physical facilities, the following questions should be considered:

- Does the cost of inspection and early replacement exceed the cost of eventual repair and the cost of downtime?
- Will the equipment last as long as it is needed without periodic inspections and overhauls?
- Is standby equipment available for continuing the training process in the case of equipment failure?

* * * *

- Is a high state of repair essential for safe working conditions?
- Is the equipment critical to the training process?

In the unlikely event that your answers to the first three questions are yes, the need for periodic inspections and overhauls is doubtful. If your answers to these three questions are no, the need for such a maintenance program is apparent. Regardless of your responses to the first three questions, however, if your answers to the last two questions are yes, periodic inspections and overhauls are a must.

The program of inspections and overhauls should involve the following activities:

- The regular and systematic inspection of all machines and equipment and of the premises
- The keeping of records concerning all inspections, replacements, and findings

- A program for the periodic replacement of essential equipment or parts
- The carrying out of repairs and replacements in accordance with inspection results or replacement schedules
- The periodic evaluation of the effectiveness of the inspection and overhaul program

The importance of preventive maintenance--both on a day-to-day basis and through a program of periodic inspections and overhauls--should not be underestimated. When properly planned and organized, it can be a positive factor in preventing accidents, eliminating lost class time, reducing repair costs, and prolonging the life of the equipment and building. Consider, for example, a press in a print shop that has been only superficially maintained on a daily basis and that has not been inspected since it was purchased six months previously. The timing of the rollers is off now, but no one has noticed yet. This defect is, however, called jarringly to everyone's attention when one of the students gets his hand caught in the rollers. An accident? Many student injuries charged to "training hazards" are, in fact, the result of poor maintenance.

Aside from the tragic aspects of this situation, there are other problems to be dealt with. This press is now "down." No student training can occur where that press is concerned, not to mention the fact that students will not now be able to produce the 500 play programs they promised the local drama club. Repairs are required immediately. The repair agent is called, but her normal schedule is full for the next few days. Thus, the school administrators have two options: they can lose several days of training time, or they can ask the repair agent to make the repairs outside normal working hours, thus involving expensive overtime costs.

And all this could probably have been avoided through the planning and implementation of a preventive maintenance program. Preventive maintenance is a conservation program--a systematic method of saving that will return dividends in training results, accident prevention, and dollars.

Means of Providing Maintenance

In providing preventive maintenance, several alternatives are available; among these are the following:

- Instructor and student maintenance
- Institutional work force maintenance
- Contracted maintenance service
- Maintenance by private repair firms or individuals on a demand basis
- No maintenance repairs--just discard or replace the item

Instructor/student maintenance. Some instructors do not like to have their equipment serviced or repaired by someone other than themselves, and indeed they can constitute an eager, economical, and concerned maintenance work force. Other instructors do not feel qualified to make such repairs. Still others may feel they are being imposed on if they are asked to help with maintenance. Realistically, the following factors should be considered when contemplating the use of instructors for maintenance work:

- Is there a maintenance contract on the equipment stipulating that only those authorized by the manufacturer/supplier can make repairs? If so, unauthorized work done by the instructor could negate the warranty.
- Is the instructor skilled enough to do the work? Mistakes can prove very expensive if they lead to greater problems. Often the manufacturer or vendor will offer to train instructors in the proper operation and simple troubleshooting of equipment.
- Are the needed parts available? Acquisition of materials and parts may be a problem under this system, unless sufficient records have been kept to show what repair parts should be kept on hand.
- Will the instructor's services involve wages or a salary increment? Is it equal to or less than the cost of calling in an outside service agent? Do the instructor's contract and the school's policy allow for such fees to be paid?

In regard to the use of students, similar questions must be asked. In addition, however, if the repairs are to be made during class time, it is important to ensure that the repair job is genuinely related to the student's training goals. Will experience in making this repair contribute to his/her success on the job? If not, then he/she should not be involved in this task during class time. You also need to be careful not to exploit student help. Perhaps the repair job is one that will be required on the job. But if student X is skilled in making the repair, he or she should not be pulled from other instructional activities to make a repair simply to save the institution money.

Institutional work force. Maintenance performed by the repairpersons, custodians, or technicians on the institutional payroll may offer some of the same advantages and disadvantages as the method described in the previous section. If the institutional maintenance staff has had adequate training and experience in servicing and repairing electrical, plumbing, mechanical, hydraulic, heating, air handling, and related systems, they can probably perform most regular maintenance work. The key to successful maintenance under this system is knowing what your maintenance crew's limitations are and, thus, when to call for qualified outside help.

Contracted maintenance service. In recent years many equipment suppliers have begun to offer their customers maintenance contracts that guarantee regular and emergency maintenance for an agreed-upon charge. This system may prove to be the most economical for sophisticated equipment since special

expertise and parts may be necessary to properly maintain or repair the equipment. This may include small items such as copiers and typewriters, or entire systems such as alarms, smoke detectors, and air conditioning. For the institution, the keys to using this system effectively are (1) knowing which equipment to put on maintenance contract, and then (2) fully using the service on a regular basis throughout the contract period. If you do not call for maintenance when it is required, you will not receive the benefit of the contract.

Some of the major advantages of this system are that persons with specific up-to-date training concerning the repair and operation of the equipment are available to you. Also, parts are usually in stock or are carried by the repair crew. Assuming that good service is provided when needed, the only potential disadvantage is the expense. If the amount of service provided costs less under the maintenance contract than it would on a case-by-case basis, then the expense is justified. However, if you have new equipment--with no basis such as prior records to determine how much maintenance and service will be required--the maintenance contract could end up costing more than the cost of the actual maintenance and repairs needed.

In selecting among prospective maintenance contractors, the administrator should compare such features as the following:

- Services involved
- Emergency services policy of contractor
- Cost of replacement parts under contract
- Length of contract
- Alternative cost structures of contracts

Private repair firms or individuals. This option is a feasible one in that the necessary expertise is usually available from these sources, and they generally can supply the parts needed. In some cases, however, the repairperson or shop might have the general expertise but lack skill in dealing with the particular make and model of equipment requiring service. This could extend the time required to diagnose the problem and make the repair, thus raising your costs. Even if the repairs can be made quickly, however, the use of private repair firms and individuals is usually a very expensive maintenance option because of the high hourly rate they charge.

One tempting method that appears to overcome this high hourly rate is to hire off-duty or retired maintenance persons. Granted, this plan can provide proper maintenance by competent individuals. However, the nonavailability of parts remains a severe problem. In addition, this practice can cause problems with the unions, which is not something vocational and technical institutions wish to have happen.

Don't repair--just discard and replace. A viable alternative in some cases may be to throw away the equipment and replace it with new or reconditioned items. Repair costs must be compared with replacement costs to determine the acceptability of this plan. The time needed to secure a replacement

vs. that needed to complete the repairs would also need to be considered, as would the potential salvage or trade-in value of the nonserviceable item.

Records

In order to have a high-quality maintenance program, adequate records are necessary. Records may be kept by the instructor, administration, and/or maintenance department. Through the use of a maintenance record, the administrators and maintenance personnel will be able to define maintenance intervals, establish maintenance calendars, detect and predict maintenance costs, and justify equipment disposal or replacement.

The following types of information should be recorded concerning each item included in the maintenance program:

- Description, model, size, attachments, accessories
- Serial number
- Date of purchase
- Vendor
- Internal assignment and transfers
- Warranty terms and dates
- Location of operators manual, technical descriptions, and schematics
- Maintenance dates, types of service, costs
- Contractors (for installation, repairs, or modifications)
- Final disposition (e.g., transferred, sold, scrapped, destroyed, lost, or stolen)
- Disposal price (if applicable)

An example of a useful type of record card is shown in sample 9. A card of this type should be kept for every item of equipment for which the institution maintains records by serial or inventory number.

Assignment of Maintenance Responsibilities

So far in this information sheet, you have had an opportunity to become acquainted with definitions of certain maintenance terms, ways to perform or provide maintenance, and the types of records involved. However, in order to accomplish your maintenance objectives, you must put all of these components and concepts together. The conventional way of doing this, as in so many other areas of administrative endeavor, is by establishing a good program. And the key part of any program is a clear delineation of who does what, plus where and when they should do it.

SAMPLE 9

EQUIPMENT MAINTENANCE RECORD

DESCRIPTION (model, size, serial no. attachments, accessories, initial cost, etc.)
John Deere Model 400, 16 hp lawn tractor with electric start, hydraulic lift, 48" mower, Serial # M3S B163 @ $4,650.

WARRANTY OR SERVICE CONTRACT DATA

IDENTIFICATION NUMBER: ID 16325

WARRANTY BEGINS	WARRANTY ENDS	CONTRACTOR
March 19, 1985	March 18, 1988	Scottville Equipment Co.

TERMS OF CONTRACT OR WARRANTY

3 years parts
1 year labor (+ 2 years, 20% discount) for all systems except battery and tires, and not including tune-up, lubrication, radiator protection.

MAINTENANCE EXPERIENCE

DATE	VOUCHER NO.	TYPE OF SERVICE	AMOUNT
6/20/85	n/a	Alignment of mower blades	warranty
9/20/85	WB 1693	Tune-up, oil change, antifreeze (-30°F)	35.00
....	....	....	....
3/13/88	n/a	Compression check, valve replacement	warranty + 56.00
9/15/88	WA 1853	Replace clutch, new tires	239.99
5/12/89	WB 0063	Replace muffler, repair punctured radiator	98.00
....	....	....	....

FINAL DISPOSITION

TYPE OF DISPOSITION: TRANSFERRED ☐ SOLD ☐ SCRAPPED ☐ DESTROYED ☐ LOST ☐ STOLEN ☐ OTHER ☒

DATE	REFERENCE OR AUTHORITY	RECEIVER	REMARKS	DISPOSAL PRICE
10/15/91	PO# AB-1639	Scottville Equipment	Trade-in on JD Model 4135	2,100.00

Therefore, you should pay careful attention to the matter of assigning maintenance responsibilities. Your first task is to consider the resources available: personnel on the staff, funds available to hire more or better staff (or to promote and develop current employees), and the time and tools available to them.

Second, you (acting in concert with those personnel affected) must designate one person or office to coordinate the entire maintenance effort. In many schools or colleges, there is a person with "full-time" duties as maintenance supervisor, but he/she often has the additional duties of custodial foreman too, depending on the size of the physical plant involved. Whatever the title, this person should be delegated the authority needed to discharge this responsibility and should be given the necessary resources. In most cases, this coordinator will report to the business officer, assistant superintendent for business, vice-president for administration, or other official of similar title.

Third, this maintenance coordinator should, in turn, determine who is responsible for the various types and levels of maintenance activity required for each building, room, or item of equipment within the institution. For example, every student using a drill press should be held responsible for cleaning shavings or sawdust from the tool before and after use. The instructor might be held responsible for sharpening the drill bits and tightening the belts, whereas one of the school's maintenance persons would be responsible for replacing a power cord or repairing a bent pulley. Finally, an outside repairperson or a manufacturer's service representative might be called in to rebuild the motor or replace the bearings in the spindle.

The operation of a photocopier provides another example. Any user may be authorized to replenish the paper supply or clean the glass plate, but only the "key operator" should be authorized to add toner, clear the paper feed, or resolve other malfunctions. If a problem occurs that the "key operator" cannot fix, he/she is instructed to notify the technician whose services are provided under the terms of a maintenance contract.

Yet a third example involves the maintenance of a leased lawn-and-garden tractor. The custodian, student, or groundskeeper who operates the tractor must check and add air, oil, or coolant, keep bolts and belts tight, and sharpen the blades of the lawn mower. However, one of the institution's maintenance workers would probably be needed to change the spark plugs or repair a flat tire. In serious cases of engine failure, broken shafts, or hydraulic system leaks, the tractor would likely be returned to the dealer for repair under the terms of the lease.

It might be appropriate for the maintenance coordinator to assign or allow certain other administrators to develop preventive maintenance plans for their respective areas, provided such plans blend well with the maintenance program for the entire institution. This approach is especially applicable within those vocational areas, such as trade and industrial education, where a great deal of shop equipment is involved. This decentralization is important and useful for several reasons. First of all, the program director or instructor of the occupational specialty is probably the person most qualified and experienced with the equipment under consideration. Second, it would not be a wise use of time for institutional maintenance workers to perform routine tasks such as cleaning, lubricating, or adjusting tools. Most important, the students should be learning how to perform many of these tasks, since they will be part of their job responsibilities once they become employed on their own. Involvement now will help them to develop a proper appreciation of the importance of maintenance.

Once developed and refined, however, a maintenance plan should not necessarily remain rigid and unchanging, nor should personnel be unduly constrained by its provisions. In other words, you should avoid the kinds of jurisdictional quarrels that are often reputed to apply to the construction crafts ("Oh, I can't do that; that's an electrician's job."). On the contrary, the maintenance coordinator should encourage cross-training among those persons involved with maintenance, thus providing for depth and flexibility within the work force. By following this approach, the institution will not be so sorely

handicapped by the absence (through illness, vacation, or resignation) of "the only person here who knows how to make that thingamabob run."

In fact, it behooves the chief administrator and several of his/her staff to learn for themselves at least the rudiments of operating some of the equipment involved in the key systems of the buildings--heating, ventilating, electrical, plumbing, and so on. This capability will allow an administrator to react swiftly during emergencies to keep equipment running (or shut it down for safety reasons) until more expert assistance arrives. Likewise, when the administrator is the only one present (for a weekend community event, for example), he/she could respond to minor complaints--ranging from overheated rooms to noisy fans or blown fuses) without resorting to an emergency call to a custodian or maintenance supervisor who might live clear across town.

Through careful planning and close attention to available resources, you should be able to apply these principles so as to accomplish your primary objectives: (1) keeping the buildings and equipment of the institution working at all times to facilitate the teaching-learning process, and (2) practicing economy by detecting and correcting problems early, before they require expensive repairs.

You may wish to arrange through your resource person to meet with and interview a maintenance supervisor in a business or industrial firm, or with an administrator having these responsibilities in a vocational education institution. (In most cases, the basic principles will be the same, even if the setting is not an educational one.) Before the interview takes place, you should prepare a list of questions, such as the following, that you wish to have answered:

- To which items of equipment does the maintenance system apply?
- What forms and records are kept as part of this system?
- What resources are used to provide the inspection and repair services? In particular, how are workers and supervisors or students and instructors involved?
- What criteria does the firm/institution use to decide if an item should be repaired rather than replaced?
- What skills, knowledge, and experience should a maintenance supervisor have?

The following "Case Situation" describes an incident in which several administrators developed an institutional preventive maintenance program for their institution's buildings and equipment. Read the situation described, examine closely the outline of the program they drafted, and identify any deficiencies that may exist. Correct these errors either by providing improved measures or by adding new elements to the program as needed. (You can make these changes in the margins of the outline itself or describe them on a separate sheet of paper.)

CASE SITUATION

The president of Colonial Community College (CCC) and her staff are worried. Three times in the last two months, the college has suffered losses due to malfunctioning equipment or faulty structures. First, there was the severe leak in the roof of Jones Hall that led to costly damage of the machines and paper located in the printing laboratory and shop. Then, the college's vintage van "threw a rod" due to low engine oil, and so private transportation had to be lined up quickly to accommodate the numerous field trips and student activity excursions that normally require the use of the van. Finally, just last weekend, the safety valve on the boiler stuck, and a catastrophic explosion was averted only by the alertness of a midnight-shift custodian; nevertheless, the boiler was weakened and will need to be replaced before next winter.

Although most of these losses were covered by insurance, they have already delayed instruction in several programs. Seeking to avert recurrences, President Leah Gallatin called a meeting of Ted Paine, vice-president for business and administration; Jack Adams, superintendent of building and grounds; and Elizabeth Ross, dean of vocational instruction.

The meeting began with some brief postmortems of the three incidents, but that soon degenerated into a name-calling contest. Mr. Paine said that Mr. Adam's crew had done an incompetent job of roof painting and patching. Mr. Adams said that Mr. Paine never budgeted enough money for him to hire qualified maintenance persons, and he knew that Ms. Ross refused to make her instructors inspect their own equipment.

After letting staff air their grievances, Dr. Gallatin turned the meeting to more productive actions. After two hours, a preventive maintenance program had taken shape in the form of an outline (see p. 74). Dr. Gallatin proposed that, before this outline was developed further, each one present should share it with co-workers here at CCC, with colleagues and counterparts in other institutions, or with anyone who might be able to offer an informed, helpful opinion concerning the program's accuracy (university professors and students and state department officials included).

COLONIAL COMMUNITY COLLEGE

Preventive Maintenance Program

(D R A F T as of 2/29/96)

I. Applicability: This program will be observed for all real property (buildings, lawns, sidewalks, roads, etc.), building systems (heating, ventilating, plumbing, electrical, etc.), and those items of equipment for which by-number inventory records are kept (generally having a value of over $50 and an expected useful life of two years or more).

II. Definitions:

A. Routine Maintenance--those actions taken by a person in the course of his/her usual use of a room or machine to keep it in working condition (checking oil, replacing bulbs, reporting broken furniture, cleaning work area, mopping up spills, etc.)

B. Diagnostic Maintenance--periodic inspections performed by a specialist to detect incipient problems or to determine the cause of unsatisfactory performance (checking compression and timing of engines, locating a rattle on a table saw, calibrating a thermostat, etc.)

C. Preventive Repairs--repair or replacement of parts whose continued use would cause failure of a larger machine or system (leaky water valves, worn bearings, dull cutting surfaces on tools, arcing electrical switchboxes, worn asphalt sealer, etc.)

D. Corrective Repairs--repair or replacement of those items needed to restore a broken-down item or system to acceptable or perfect operation (broken fuel pumps, exploded boilers, doors warped so badly they won't lock, burned-out motors in electric typewriters, etc.)

III. Responsibilities: Overall coordination will be assigned to Mr. Jack Adams, superintendent of building and grounds.

A. Students--no responsibilities except to report problems to the instructor

B. Instructors--only those cleanup types of items listed under "routine maintenance," to be performed by themselves or by lab/shop technicians or instructor aides; NO OTHER TYPES OF REPAIRS SHOULD BE ATTEMPTED

C. Custodians--"routine maintenance" within their assigned areas

D. College Maintenance Crew--"diagnostic maintenance" at intervals assigned by Mr. Paine, and routine items in response to reports from instructors (one person will be added to the maintenance staff specifically to oil, sharpen, tighten, adjust, etc., the many pieces of equipment used by students in their labs, shops, and clinics); also responsible for performing limited repairs, that is, those involving less than $100 in parts or 10 hours of labor.

E. Private Repair or Service Firms--all "corrective repairs" and any "preventive repairs" that involve over $100 in parts or 10 hours of labor

F. Miscellaneous--(1) No service contract will be initiated or continued; there are no records on them, but these contracts seem to be quite expensive; and (2) Any item for which the estimated cost of overhaul or repair exceeds 15% of its current (depreciated) value will be discarded.

IV. Records: All records will be derived from the accounting reports of Vice-President Paine (payments to outside repairpersons, utility bills, purchase of repair parts, salaries of maintenance crew, etc.)

Compare your completed written corrections and additions to the preventive maintenance program described in the "Case Situation" with the "Model Analysis" given below. Your response need not exactly duplicate the model response; however, you should have covered the same major points.

MODEL ANALYSIS

In general, President Gallatin and her staff have been following a sensible approach, and their sharing of this proposed plan before it is made final and implemented should result in some improvement. In fact, much of the plan is fairly sound already, although some adjustments are needed.

Particularly commendable is their designation of one coordinator for the preventive maintenance effort, supplemented by the delineation of specific duties for many other persons within the college. Curious omissions are those of the administrative, professional, and clerical support staff; they, too, should be assigned duties comparable to those of instructors and students.

Furthermore, the applicability of the program was well described, and the statement of definitions and examples at the beginning of the outline make the program elements quite clear to readers and users.

Although the listing of duties in part III is specific, it is unfortunately incorrect in most instances. Many of the college's own resources are not being used to their fullest. For example, there is no reason for instructors to handle cleanup while students do nothing. Not only should students be expected to keep their instructional lab/shop/clinic areas clean, but they can also be assigned many of the other tightening/adjusting/lubricating chores. In fact, there are good instructional reasons for helping students not only to acquire maintenance skills, but also to cultivate the proper attitudes about their maintenance responsibilities. These responsibilities will certainly be part of their future job expectations.

The instructors likewise can be authorized to conduct higher-level maintenance activities. In many cases, they may be more knowledgeable about the equipment than Mr. Paine's maintenance persons. Consequently they should be allowed to make or coordinate repairs or diagnostic inspections, working in cooperation with Mr. Paine. At the very least, several of them could be employed during term breaks or summer vacations to conduct inspections and complete minor overhauls of their respective instructional equipment.

In fact, if those changes were made, the college would not have to hire that additional person (who would have been doing unskilled work anyway). Instead, the college could upgrade its current staff by providing additional or cross-training, or raising salaries to attract/retain more qualified personnel.

It's a good idea to have criteria concerning (1) when to go outside the institution to get work done rather than doing it yourself (section III-E), and (2) when to throw something away (section III-F-2). However, the limits given in those two items are probably too low. They should have been set more flexibly, depending on the nature and value of the building or equipment, or its maintenance history.

Speaking of history, the effectiveness of this proposed maintenance program will be hard to gauge unless the records kept are more specific. Separate records should be kept for each building, system, and major item or group of equipment. The aggregated records of parts purchases, maintenance salaries, and so on, will not yield the type of information needed (1) to identify nagging repair problems or expensive-to-maintain types of tools, or (2) to signal replacement time or overhaul periods for key system components.

In fact, records of this nature might very well show that a service contract would indeed be the most cost-efficient manner in which to provide maintenance for certain pieces of equipment. Basing such a decision on records of actual experience is far better than simply saying "No, that's too expensive." After all, maintenance programs, in the last analysis, can be measured only in terms of their value--in saving money or lost instructional days, in preventing further loss of property or life--not in terms merely of their apparent cost.

Level of Performance: Your completed written analysis should have covered the same major points as the "Model Analysis." If you missed some points or have questions about any additional points you made, review the material in the information sheet, "The Elements of an Effective Preventive Maintenance Program," pp. 63-71, or check with your resource person if necessary.

Learning Experience V

OVERVIEW

After completing the required reading, (1) conduct and document a safety appraisal inspection of an actual educational facility, and (2) prescribe remedies to correct the problems identified in the institutional health-safety-security inspection report described in a given case study.

You will be reading the information sheet, "Health, Safety, and Security Plans," pp. 79-94.

You may wish to read the supplementary reference, Developing Shop Safety Skills.

You will be conducting a safety appraisal inspection of an actual educational facility, recording your findings on an appropriate rating sheet, summarizing your findings, and recommending corrective actions if needed.

Your competency in conducting a safety appraisal inspection will be evaluated by your resource person, using the "Inspection Checklist," pp. 97-98.

continued

You will be reading the "Case Situation," pp. 99, analyzing the findings of the health, safety, and security inspection described, and making recommendations for improvement based on your analysis.

You will be evaluating your competency in prescribing remedies to correct institutional health, safety, and security problems by comparing your completed recommendations with the "Model Recommendations," pp. 101-102.

For information about how to develop, rehearse, and refine plans and policies concerning health, safety, and security in an educational institution, read the following information sheet.

HEALTH, SAFETY, AND SECURITY PLANS

All vocational education administrators are conscientiously, if not painfully, aware that they must be careful and responsible stewards of public funds and property. This responsibility includes assigning facilities wisely, sharing them with community users, keeping accurate inventory records, and preventing breakdown and repairs through preventive maintenance. It also includes the need for wise purchasing and for insurance coverage. All these elements are important. In this information sheet, however, we will be discussing the need to make sure also that the facilities of your institution do not constitute a hazard to others. Specifically, you will be learning how to manage equipment and buildings in such a way that they are safe for occupants and users, whether they be students, faculty, staff, or visitors.

The plans you will be developing for health, safety, and security purposes have an ironic twist to them. Rather than striving for implementation of these plans, you will actually be hoping that you never have to invoke them. Nobody really looks forward to having an opportunity--except during practice--to place into action his/her plans for coping with gas leaks, bomb threats, accidents, public disturbances, or disasters such as tornadoes, floods, fires, or even the earthquakes and volcanic eruptions that ushered in the eighties.

However, hoping that these situations will never occur is no substitute for preparing contingency plans, and in fact, many state or federal laws require the existence of such plans.

The general procedures covered by this information sheet will be explained only briefly. You will be given many details in the samples. Sample 10 shows some of the items you would need to address in a disaster plan, for example. However, it will rest primarily on your ingenuity and thoroughness to develop the checklists, inspection points, and coordination steps that best fit your local situation.

In general, health, safety, and security plans need to provide for detection, drill, and documentation. As always, these provisions will need to be explained in writing, probably in the usual institutional policy and procedure documents. In your provisions, you need to delineate three elements: rules, responsibilities, and relationships.

- Rules are derived from the applicable statutes of your state or municipality and the federal government. Additional constraints are imposed by (1) other policies adopted by the board, (2) insurance

policies, and (3) the contracts that accompany certain business transactions, gifts, or grants.

- Responsibilities specify who will make the plans and policies work. It is important that one individual be designated as being in charge of each established program, and that this person's authority and responsibility be both recognized and created by the board and chief administrator. In like fashion, the duties of significant other employees must be spelled out and related to those of the board, chief administrator, and coordinator of the health, safety, and security program.

- Relationships must be established not only internally, but also with applicable external agencies or groups. Many of these possess expertise that will enhance your efforts. They can provide manuals, checklists, training materials, workshops, brochures, sample equipment, on-site inspection or assistance visits, or direct services in the event of emergency. Several national and state groups of this nature are listed in sample 11.

  In addition, you should develop a similar list of local agencies with which relationships should be established, such as fire and law enforcement agencies (city, county, and state), civil defense, Red Cross, ambulance services or squads, public health offices, severe weather warning networks, and insurance firms. In each of these cases, frequent and cordial personal contact is important. In the event of a fire, it's much better to say "Over here, Joe!" instead of, "Say, pal, which one is your chief?" Knowing these persons from routine encounters will facilitate working with them in more urgent situations, and they will also be more likely to keep you informed whenever new requirements or techniques come to their attention.

Now let us return to the big three ideas of detection-drill-documentation.

Detection. Before you can develop feasible health, safety, and security plans, you should know what your current situation is. It is futile to formulate an elaborate tornado evacuation scheme if your institution has no sirens, or to place priority on organizing fire-fighting teams if the hoses are rotten.

For this activity, there is no substitute for on-site, direct observation. Don't rely on building blueprints; don't necessarily even trust records or reports. Go look for yourself--but take along associates to help. Your inspection should be directed toward identifying both hazards and helps. Watch for situations that could cause problems (bare wires, improper storage of oily rags) or worsen the effects of accidents (narrow dim corridors, frequent overcrowding of assembly halls). In the area of "helps," check for the presence or condition of needed emergency equipment such as fire extinguishers, alarm bells, exit and emergency lights, first aid kits, and resuscitation equipment.

SAMPLE 10

SOME ELEMENTS OF A DISASTER PLAN

- Written policy statement
- Listing of types of disasters expected
- Sketch of school layout
- Explanation of relationships with disaster and welfare agencies
- Emergency organization chart
- Description of school warning system
- Emergency shutdown procedures
- Designation of evacuation routes, including directional signs
- Designation of shelters for employees
- Description of participation in mutual aid associations
- Designation of alternate school headquarters
- Directions for securing utility repairs

SAMPLE 11

ORGANIZATIONS THAT CAN ASSIST IN HEALTH, SAFETY, OR SECURITY PLANNING

National

American Society of Safety Engineers; Chicago, Illinois
Association of Casualty and Surety Companies; New York, New York
National Board of Fire Underwriters; New York, New York
National Safety Council; Chicago, Illinois
Underwriters' Laboratories; Chicago, Illinois
Occupational Safety and Health Administration; Washington, D.C.

State

State Division of Safety Inspection
State Division of Industrial Safety
State Department of Labor
State Division of Health and Hygiene
State Fire Marshall's Office

In order to ensure that your inspection is thorough, it is helpful to develop and use a checklist that includes the criteria you are looking for--the ideal elements of a healthful, safe, and secure facility. Sample 12 shows some of the areas you should cover in developing a checklist of your own. Samples 13 and 14 present two such checklists, which you could use or adapt to your own purposes.

Drills. The plan that you develop based on your inspections, as well as on your knowledge of applicable laws and likely hazards, cannot be thrown on a shelf and forgotten. This is no place to rely solely on theory. Seldom does anyone understand his/her role in an emergency evacuation, a crowd-control situation, a fire, or an accident, without having seen, and then participated in, some type of walk-through. A walk-through or rehearsal (e.g., a fire drill) can usually disclose new situations, unworkable assumptions, missing equipment, or inefficient uses of personnel--all of which call for refinement of the plan. Such rehearsals must be conducted on a periodic basis to reinforce understanding. Even when the plan itself is "perfect," turnovers of staff and students bring new people on the scene who do not know what to do.

Since the protection of the occupants of your buildings is important, your first priority should be the practice and refinement of evacuation procedures. However, you should not devote all your attention to those types of fire drills, because they can soon degenerate into a mere race for the door--or a guessing game to predict the drill time so everyone can have his/her coat handy. Worse yet, others might become apathetic and not participate, or they might develop a boy-who-cried-wolf attitude.

Therefore, you should also devise other kinds of practice (held either at the same time as an evacuation drill or without the sounding of alarms) that test the capability of staff and students to react to certain kinds of emergencies and to establish the communications needed to locate a fire, report a fire or accident, and direct emergency crews to the proper scene. These practice activities will enable you to go beyond the primary concern for occupant welfare and to develop capabilities that can prevent needless hazard to emergency personnel, as well as excessive loss of property.

Rehearsals of this type can be devised by you or local fire/police/medical officials, using either your own imaginations or adaptations of effective techniques used by other agencies. For example, a local fire crew could simulate a fire (e.g., a hypothetical burning pile of rags in a custodian's closet) and announce this to the nearest bystander or staff person. They would then observe how quickly the alarm was sounded, how accurately the fire was reported, and how soon the fire department was summoned.

In similar fashion, emergency medical squads could provide personnel who simulate various injuries. In this case, you could then assess how appropriately the first person on the scene (often a shop instructor or activity advisor) either rendered first aid or called for professional assistance. For example, did the instructor refuse to try to move a victim having a suspected back injury? Did he/she begin immediate cardiopulmonary resuscitation (CPR)

SAMPLE 12

AREAS OR SUBJECTS TO COVER BY INSPECTIONS

- Walking and working surfaces
- Exits and exit markings
- Occupational health and environmental control
- Occupational noise exposure
- Hazardous materials
- Spray painting
- Personal protective equipment
- General environmental controls
- Medical and first aid
- Fire protection
- Compressed air
- Materials handling and storage
- Machinery and machine guarding
- Hand and portable powered tools
- Welding, cutting, and brazing
- National electric code
- Record keeping

SAMPLE 13

POINT-BASED INSPECTION RATING SHEET

APPRAISAL CRITERIA FOR INSTITUTIONAL SAFETY

Maximum Points Allotted for Item	Non-existent	Totally Inadequate	Poor	Borderline	Satis-factory	Excellent
5	0	1	2	3	4	5
10	0	2	4	6	8	10
15	0	3	6	9	12	15

	Possible Points	Earned	Total Earned
A. Site Safety			
1. Off-site safety			7
a. Access streets have sufficient signals and signs; offer safe entrance from school area.	5	3	
b. Sufficient space is provided for safe passage of pedestrians.	5	4	
2. On-site safety			8
a. Sidewalks and crosswalks are protected by proper signs and signals.	5	3	
b. Entrances and exits are adequate for traffic flow; traffic patterns and marked parking are designed for safe entry and exit.	5	3	
c. Loading areas are protected with rain shelters and segretated from other vehicular traffic and pedestrian walkways.	5	2	
SUBTOTAL--SITE SAFETY	25		15

SOURCE: Harold L. Hawkins, Appraisal Guide for School Facilities, Second Edition (Midland, MI: Pendell Publishing Company, 1977), pp. 52-55.

	Possible Points	Earned	Total Earned
B. Building Structure Safety			
1. Structure			14
a. Roofs and ceilings are constructed to withstand storm and wind load.	5	5	
b. Outside stairs are well lighted, with handrails and skidproof treads.	5	4	
c. The building is appropriately vented to prevent gas trappings.	5	5	
2. Heating and Cooling			8
a. Air supply is filtered and pure; blowers are screened to prevent accidental contact with equipment.	5	4	
b. The central heating unit is located away from student-occupied areas.	5	4	
SUBTOTAL--BUILDING STRUCTURE SAFETY	25		22
C. Interior Safety			41
1. Rooms and Corridors			
a. Doors open outward; exit doors are equipped with panic bars.	5	5	
b. Glass is properly located and protected to prevent accidental student contact.	5	3	
c. Plaster and other materials are well attached.	5	4	
d. Adequate light is provided for day or night use of corridors, including emergency lighting.	5	4	
e. Flooring in rooms and corridors is skidfree, and ramps are covered with nonslip material.	5	4	

	Possible Points	Earned	Total Earned
f. Stair runs are not in excess of sixteen risers nor less than three, and are not in excess of 6 1/2 inches.	5	5	
g. At least two main stairways exist, located well apart in multistory buildings.	5	5	
h. Projections in the corridors do not extend more than eight inches from the corridor wall.	5	3	
i. Furnishings are free of projections and sharp edges.	5	3	
j. Corridors terminate at an exit or a stairway leading to an exit.	5	5	
2. Electrical Equipment			11
a. Adequate electrical current is supplied to safely furnish lighting and electrical power to equipment in an emergency.	5	4	
b. Relays and fuses are properly loaded for safe operation.	5	4	
c. Electrical outlets are safely covered.	5	3	
SUBTOTAL--INTERIOR SAFETY	65		52
D. Emergency Safety			
1. General Safety			23
a. A complete plan for emergencies and building evacuation is posted in prominent locations.	10	4	
b. The fire alarm system is adequate, is independent of the regular bell system, has a distinctive sound, and is capable of both manual and automatic operations.	5	4	

	Possible Points	Earned	Total Earned
c. At least two independent exits to safety can be reached from any point in the building.	5	4	
d. Stairways are enclosed in fire-resistant stairwells.	5	5	
e. Noncombustible and fire-resistant materials are used throughout the structure.	5	4	
f. Rooms and corridors are free of fire hazards. Adequate fire-fighting equipment is properly located and available.	10	2	
2. Natural Disasters			4
Ample space is provided in corridors and protected areas for student safety in the event of a natural disaster.	5	4	
SUBTOTAL--EMERGENCY SAFETY	45		27
GRAND TOTAL--FACTORS AFFECTING INSTITUTIONAL SAFETY	160		116

SAMPLE 14

SHOP SAFETY SURVEY

MIDDLESEX COUNTY VOCATIONAL AND TECHNICAL HIGH SCHOOLS

School _____ Date _____

Teacher _____ Shop _____

	Satis-factory	Needs Attention	Does Not Apply
A. INSTRUCTION			
1. Shop safety is taught as an integral part of each teaching unit.			
2. Safety rules are posted at each machine.			
3. Printed safety rules are given to each student.			
4. Students take a safety pledge.			
5. The shop makes use of a safety inspector.			
6. There are shop safety committees--a.m. & p.m.			
7. Safety contests are promoted.			
8. Motion and/or slide films on safety are used in the instruction.			
9. The shop has a safety suggestion box.			
10. Safety tests are administered.			
11. Safety posters are in evidence.			
12. Talks on safety are given to the classes by industrial representatives.			
13. Tours are taken of industrial plants as a means of studying safety practices.			
14. Periodic safety inspections of the shop are made by a student committee.			
15. Persons from industry make safety inspections of the shop.			

SOURCE: Adapted from Cy Sommer, Safety Standards Plan for Middlesex County Vocational and Technical High Schools (New Brunswick, NJ: Rutgers University, New Jersey Vocational-Technical Curriculum Lab, 1978. ED 160 866.

	Satisfactory	Needs Attention	Does Not Apply
B. HOUSEKEEPING			
1. General appearance is orderly.			
2. There is adequate and proper storage space for tools and materials.			
3. Benches are kept orderly.			
4. Corners are clean and clear.			
5. Special-tools racks are kept in orderly condition.			
6. Tools, supply, and/or materials room is orderly.			
7. Sufficient scrap boxes and trash cans are provided.			
8. Scrap stock is put in scrap boxes promptly.			
9. Materials are stored in an orderly and safe condition.			
10. A spring-lid metal container is provided for oily rags and waste.			
11. All waste materials and oily rags are promptly placed in containers.			
12. Containers for oily rags and waste materials are emptied daily.			
13. Dangerous materials are stored in metal cabinets.			
C. EQUIPMENT			
1. Machines are arranged so that students are protected from hazards of other machines, passing students, etc.			
2. Danger zones are properly indicated.			
3. All equipment control switches are easily available to the operator.			
4. All machines are "locked off" when instructor is out of the room.			
5. Brushes are used for cleaning equipment.			
6. Nonskid areas are provided around machines.			
7. Machines are in safe working condition.			
8. Machines are guarded to comply with Industrial Code or OSHA Requirements.			
9. Adequate supervision is maintained when students are using machines and dangerous tools.			
10. Tools are kept sharp, clean, and in safe working order.			

	Satisfactory	Needs Attention	Does Not Apply
D. ELECTRICAL INSTALLATION			
1. All switches are enclosed.			
2. There is a master control switch for all the electrical installations.			
3. An electrician changes fuses of over 30 amperes.			
4. Electrical outlets and circuits are properly identified.			
E. PERSONAL PROTECTION			
1. Goggles are provided and required for all work where eye hazards exist.			
2. Hoods and goggles are properly disinfected before use.			
3. Shields are provided for electric welding.			
4. Aprons, coveralls, or shop coats are worn in the shop.			
5. Rings and other jewelry are removed by students when working in the shop.			
6. The proper kind of clothing is worn for the job being done.			
7. Safety shoes are worn when needed.			
8. A respirator is used when spraying toxic materials.			
F. GENERAL PHYSICAL CONDITION			
1. Machines, benches, and other equipment are arranged according to good safety practices.			
2. Each of the following is kept clean and in good repair:			
a. stairways			
b. aisles			
c. floors			
d. walls			
e. windows			
f. ceilings			
3. Illumination is safe, sufficient, and well placed.			
4. Ventilation is safe, sufficient, and well placed.			
5. Temperature is controlled at a safe and comfortable level.			
6. Fire extinguishers are of proper type, adequately supplied, and properly located and maintained.			

F. GENERAL PHYSICAL CONDITION (cont.)

	Satisfactory	Needs Attention	Does Not Apply
7. Teacher and students know the location and use of the proper type of extinguisher for various fires.			
8. The number and location of exits are adequate.			
9. Proper procedures have been formulated for evacuating students in case of emergencies.			
10. Lockers are inspected regularly for cleanliness and absence of fire hazards.			
11. Locker doors are kept closed.			

THE FOLLOWING ITEMS INDICATED POSSIBLE HAZARDS.

IMMEDIATE ATTENTION IS REQUIRED.

Item No.	Recommendations	
	To be implemented by teacher and students	To be done by maintenance crew or other

Shop _____ School _____

Teacher _____

Date _____

with an electrical shock victim? Several devices are available that realistically simulate many types of injuries, burns, bone fractures, and so on. One manufacturer of such devices--which has offered information on its products via VocEd, the American Vocational Association Journal--is Simulaids of 269 Tinker Street, Woodstock, New York 12498.

Documentation. Just as Napoleon's army "traveled on its stomach," so does American education seem to depend on paperwork. Your plans (no matter how cleverly developed), your inspections (no matter how thoroughly conducted), and your drills (no matter how compulsively repeated) will all mean nothing unless they are documented in writing, recorded, and either reported or kept on file for the respective authorities to view. (In fact, your records-and-report status should be an item on one of your checklists.) During your coordination with state and local agencies, you should ascertain the deadlines and forms that apply to the reports you must submit to them. If no particular form or format is specified, then develop one of your own that is appropriate for and usable in your particular situation.

And need we say that you should never falsify these records? No "paper only" bomb scare drills; no unrealistically rapid building evacuation times; no signing of a fire extinguisher's inspection tag unless you actually check it. Administrators have been suspended for these and other infractions. Worse yet, some fatal fires probably could have been quenched in time had the extinguisher really been weighed and recharged. Enough said.

The Special Problem of Security

Unlike many of the health and safety measures you will take, many security operations, such as fences, locks, and patrols, are often visible and/or active. Like preventive maintenance, however, only the deterrent procedures--and their costs--are noticed. Provided they are successful (i.e., nothing is lost, vandalized, or stolen), the value of the results is not as readily apparent, and the precaution may seem unnecessarily expensive.

Security operations can be divided into two general areas: external and internal. External security consists of overt actions taken to deny access to the general property and buildings of the institution. Some of the more obvious external security measures are locking buildings for the night, erecting tall fences around storage areas, and having the building patrolled.

Internal security applies to the means used to secure property or privacy during the times when the institution is "open for business." Lockable safes, file cabinets, and storage cabinets; keyed or metered copying machines; coded computer memory; and limited-access shops or clinics--these all constitute internal security measures.

The most common security device is the lock and key. Your institution should have a procedure for authorizing and recording the issuing of keys. A well-designed master/submaster system will reduce the number of keys issued to any one person, thus minimizing the probability of loss. It will also curtail

the consequences of the loss of any one key. At any rate, the key-record system should be "double-entry." In other words, it should quickly reveal who has a key for any given area, and it should show all keys issued to any one person. Furthermore, a key should be issued only for a limited period of time (e.g., a year or the length of the person's employment contract) and then should be inventoried before it is reissued.

Also, the key's recipient should be formally apprised of the responsibilities he/she accepts along with the key. Sample 15 shows an excerpt from one vocational high school's security system and key procedures guide. Rules and schedules pertaining to the locking of doors should be developed with the users in mind, preferably by consulting the users themselves. Too often it seems that the security system serves to thwart legitimate users, not to deter thieves. A sensible locking schedule can elicit the cooperation of the users and preclude their use of sticks in doors or tape on lock bolts--practices that only defeat the purpose of the precaution.

The advent of low-priced, miniaturized electronics has made some sophisticated security systems readily available to educational institutions. Ultrasound sensors, hidden cameras, silent or remote-sounding alarms, and card- or pushbutton-actuated "keyless" locks offer the advantages of inconspicuousness or easy modification, but they also impose limitations. When considering such systems, don't make the same error as the storekeeper who hired a $10,000 per year watchman to prevent burglaries that had averaged only $4,000 per year. In the area of security, as well as in health and safety matters, tailor the remedy or prevention to the actual problems discovered through inspections and experience.

Finally, there is a need to differentiate between trespassers and legitimate visitors. Many schools and colleges accomplish this by posting signs prominently near all entrances to the grounds, campus, and buildings. These placards cite the relevant statute or board policy and direct the visitor to report to a central office. From that point on, visitors should either carry a special visitor's pass or be escorted by an employee of the institution. Similar signs near public or recreational facilities might state that only students or staff of the institution may use the facility, and that they will need to show proper identification upon request. All others are subject to being politely escorted from the premises.

In all of the matters covered by this information sheet, you must realize that all of the time spent on developing, implementing, practicing, and following up on health, safety, and security plans will prove most valuable and worthwhile in the case of an emergency. Even if such an event never happens, the effective administrator cannot overlook the necessity of being prepared, just in case these plans, someday, somewhere, must be put into action.

SAMPLE 15

KEY CONTROL AND SECURITY SYSTEM GUIDELINES

KEYS

Due to the type and amount of equipment, the nature of the facility, and the number of groups to be accommodated, it is imperative that staff members assume responsibility for protecting the building and equipment.

Keys will be issued by the Director of Pupil Personnel to those persons requiring them. A custodian will be on duty in the building twenty-four (24) hours a day, Monday through Friday, during the school year.

Student keys to the various cabinets located in the shop and lab areas will be issued by the Supervisor to the teacher and then to the students.

All wall lockers have built-in combination locks, and students should be urged to keep valuables locked up.

Keys must be checked in at the end of the school year.

BUILDING ELECTRONIC SECURITY SYSTEM

Time of Operation

School Year

From approximately September 1 to June 1 each year, the system will normally be operational only on weekends--from 7:00 a.m. on Saturday morning to 6:30 a.m. on Monday morning. Staff personnel are on duty twenty-four (24) hours per day at all other times with the exception of vacation schedules such as Christmas and Easter.

The above schedule will vary slightly from year to year in accordance with the school calendar.

Summer

From approximately June 1 to September 1 each year, the system will normally be operational on weekdays from 5:30 p.m. to 6:30 a.m. and on a twenty-four (24) hour basis on weekends.

The above schedule will vary slightly from year to year in accordance with the school calendar.

Authorized Personnel

Only the following personnel are authorized to be in the building at times when the electronic security system is operational:

Supervisor, Buildings and Grounds
Assistant Supervisor, Buildings and Grounds
Clerk-Treasurer
Superintendent
Director of Pupil Personnel
Director of Vocational Education
Supervisor, Planning and Purchasing
Supervisor, Agriculture, Occupational Work Experience, and Food Service
Director, Adult Education
Supervisor, Business, Academic, and Distributive Education
Recreation Manager
Basketball Coaches
Supervisor, Trade and Industrial Education and EMR
Assistant Supervisor, Trade and Industrial Education and Adult Education

The above personnel must call the Ace Security Company, 422-5063, to report their presence in the building immediately upon entering and then turn off the security system at the control panel. When leaving the building, personnel must call the same number listed above to report that they are leaving and then be certain to reactivate the security system.

No other personnel should be in the building during times when the electronic security system is operational without special permission from the Superintendent.

SOURCE: Adapted from guidelines used at the Eastland Vocational Center, Groveport, Ohio.

If you are interested in learning more about the particular area of shop safety, you may wish to read the set of materials entitled Developing Shop Safety Skills. In addition to the basic book, this set also includes a student workbook and a teacher's guide, which can be supplemented by an audiovisual package of photo slides, casette tapes, and a user's guide.

As you peruse these materials, ask yourself to what extent these same principles can also be applied to nonshop or non-instructional situations. Look, in particular, for ideas on how to improve the safety attitudes and consciousness of students and faculty so that they become even stronger allies in the institution's campaign to remedy hazardous situations.

Arrange through your resource person to conduct a safety appraisal inspection of an actual educational facility. In order for your resource person to evaluate your competency in this skill, the facility must be one with which he or she is familiar, or he/she must be available to visit the facility with you. The facility could be a secondary or postsecondary institution in which you are employed, or another one with which your resource person is familiar. Or it could be a facility at a college/university--for example, the one through which you are completing this module.

To structure your inspection, select, adapt, or develop a rating form that includes the safety criteria to be met. You may use a form similar to the one shown in sample 13, pp. 84-87, another form of your own choosing, or one recommended by your resource person.

In conducting the safety inspection, you need to keep in mind that your inspection is unofficial. You are a guest of the institution involved, and as such, it is not your place to criticize their facility or dictate actions they should take. If the institution's staff wish to have feedback concerning your findings, this should be arranged through your resource person.

After conducting the observation/inspection tour, you should prepare a report of your appraisal, including both the completed checklist and a summary of your observations and suggested corrective actions.

After you have conducted your safety appraisal inspection, arrange to have your resource person review and evaluate your completed inspection report. Give him/her the "Inspection Checklist," pp. 97-98, to use in evaluating your work.

Name _____

Date _____

INSPECTION CHECKLIST

Directions: Place an X in the NO, PARTIAL, or FULL column to indicate that each of the following performance components was not accomplished, partially accomplished, or fully accomplished. If, because of special circumstances, a performance component was not applicable, or impossible to execute, place an X in the N/A column.

	LEVEL OF PERFORMANCE			
	N/A	No	Partial	Full
In preparing to conduct the inspection, the administrator:				
1. selected or adapted a checklist that was appropriate for the area or activity being inspected.....	☐	☐	☐	
2. used a site map and/or set of floor plans to ensure thorough coverage of the assigned area.....	☐	☐	☐	
3. secured in advance the consent and cooperation of the instructors or administrators responsible for each area being visited.....	☐	☐	☐	
While conducting the inspection, the administrator:				
4. dealt with both the facility's physical aspects (design, construction, and condition) and its management, but not with the educational practices of the instructor.....	☐	☐	☐	
5. accurately identified the important characteristics and major deficiencies of the facility being inspected.	☐	☐	☐	
6. promptly noted and recorded applicable ratings and remarks.....	☐	☐	☐	

	LEVEL OF PERFORMANCE			
	N/A	No	Partial	Full
After completing the inspection, the administrator:				
7. made sufficient copies of the completed checklist to allow it to be shared with the persons responsible for each inspected area (at their request).....	☐	☐	☐	
8. made recommendations concerning corrective actions that were feasible and practical in application.....	☐	☐	☐	
9. prepared a summary report (including those recommendations) that was clear, well organized, and readable....	☐	☐	☐	

Level of Performance: All items must receive FULL or N/A responses. If any item receives a NO or PARTIAL response, the administrator and resource person should meet to determine what additional activities the administrator needs to complete in order to reach competency in the weak area(s).

The following "Case Situation" describes the results of an institutional health, safety, and security inspection conducted at a vocational high school. Read the situation, analyze the findings described, and identify any problems. Describe in writing what remedies you would prescribe to correct these problems, including at least two recommendations for each of the three areas involved: health, safety, and security.

CASE SITUATION

Rafael Garcia, director of vocational programs at Westridge Vocational High School (WVHS), was assigned by his superintendent to inspect the school's entire facilities early in the summer and come up with some recommendations for necessary revisions to WVHS's health, safety, and security plans. Such an inspection was completed, with the assistance of the various vocational service area directors (e.g., business and office, trade and industrial, home economics), during June. Some of those inspection findings are shown below (3 = commendable, 2 = acceptable, 1 = marginal, 0 = unsatisfactory):

	Bus.	T & I	Home Ec	Admin Offices
Equipment, instructional--safe condition	3	1	2	N/A
Equipment, fire fighting	0	2	2	1
Alarms, fire	0	1	1	1
Alarms, burglar	2	3	1	3
Exit signs	3	3	3	3
Dust/fume masks, hoods	N/A	1	3	N/A
First aid kits	3	1	3	1
Evacuation sign/map posted	3	1	2	2
Cabinets kept locked	3	3	3	1
Noise protection (ear plugs)	N/A	2	N/A	N/A
Records of safety instruction	1	1	1	1
Lost keys last year	2	3	2	1
Fire drill reports submitted	1	2	1	1

Compare your completed written recommendations (prescriptions) concerning the "Case Situation" with the "Model Recommendations" listed below. Your responses need not exactly duplicate the model responses; however, you should have identified corrective actions of the same general type.

MODEL RECOMMENDATIONS

Health:

1. T & I needs to secure more first aid kits and fume masks or hoods.
2. The administrative offices need more first aid kits (or components).

Safety:

1. The classrooms in the Business and Office area must immediately have their fire fighting apparatus and fire alarm bells recharged, repaired, or installed.
2. In fact, all fire alarms must be checked and improved.
3. More fire drills must be conducted (or, if indeed they did occur, then better records should have been kept).
4. Same is true for safety instruction classes.

Security:

1. The burglar alarm in the home economics area needs repair.
2. Key control must receive more attention among the central office administrators.
3. Same is true regarding the locking of cabinets in the administrative area.

General:

1. With the exception of documentation (records of safety inspection and fire drills), the Business and Office area should be commended (the fire alarms and equipment problems seem to be institutionwide).

2. Perhaps the director could offer some tips to the T & I director, who is marginal, or worse, in all areas except security (a compliment would be appropriate there, lest he/she get too discouraged).

3. The administrative office area also shows up poorly. Unless the corrective action "starts at home," the others will not have a good example to follow, and total, enthusiastic compliance might be hard to secure.

Level of Performance: Your completed written recommendations should have covered the same major points as the "Model Recommendations." If you missed some points or have questions about any additional points you made, review the material in the information sheet, "Health, Safety, and Security Plans," pp. 79-94, or check with your resource person if necessary.

Learning Experience VI

FINAL EXPERIENCE

While working in an actual administrative situation, manage vocational buildings and equipment.*

As part of your administrative responsibility, manage vocational buildings and equipment for a vocational education institution or program. This will include--

- assigning building space to various departments and service areas
- coordinating community use of facilities
- maintaining an inventory of equipment and supplies
- operating a preventive maintenance program
- devising plans to preserve health, safety, and security

NOTE: Due to the nature of this experience, you will need to have access to an actual administrative situation over an extended period of time.

As you complete each of the above activities, document your activities (in writing, on tape, through a log) for assessment purposes.

continued

*If you are not currently working in an actual administrative situation, this learning experience may be deferred, with the approval of your resource person, until you have access to an actual administrative situation.

FINAL EXPERIENCE continued

Arrange to have your resource person review the documentation of your activities and any products developed under your leadership. If possible, arrange to have your resource person observe at least one instance in which you are working with others in the process of managing the facilities (e.g., an on-site visit of a representative of a community agency wishing to use the facilities).

Your total competency will be assessed by your resource person, using the "Administrator Performance Assessment Form," pp. 105-109.

Based upon the criteria specified in this assessment instrument, your resource person will determine whether you are competent in managing vocational buildings and equipment.

Name _____

Date _____

ADMINISTRATOR PERFORMANCE ASSESSMENT FORM

Manage Vocational Buildings and Equipment

Directions: Indicate the level of the administrator's accomplishment by placing an X in the appropriate box under the LEVEL OF PERFORMANCE heading. If, because of special circumstances, a performance component was not applicable, or impossible to execute, place an X in the N/A box.

	LEVEL OF PERFORMANCE					
	N/A	None	Poor	Fair	Good	Excellent
Overall, the administrator:						
1. prepared or modified, then published and followed, procedures for managing buildings and equipment.....	☐	☐	☐	☐		
In coordinating the assignment of space to institutional departments, or to community users, the administrator:						
2. delegated to departmental control only those facilities having very narrowly specialized use and/or requiring extraordinary levels of security or operator knowledge.....	☐	☐	☐	☐		
3. retained in a common pool those facilities usable by many persons and assigned them to users on a fair basis.....	☐	☐	☐	☐		
4. recorded and computed the utilization rate of classrooms, laboratories, shops, and shared equipment.....	☐	☐	☐	☐		
5. worked closely with those adminisistrators who prepare the vocational and academic class schedules.....	☐	☐	☐	☐		

	LEVEL OF PERFORMANCE					
	N/A	None	Poor	Fair	Good	Excellent
In making institutional facilities available for community use, the administrator:						
6. verified that the requesting organization's purpose and its activity were consistent with the nonprofit, educational nature of the institution.....	☐	☐	☐	☐		
7. scheduled the community event in an appropriate room so as to avoid conflict with regular classes or institution/student-sponsored events.....	☐	☐	☐	☐		
8. negotiated a usage fee considering the institution's costs, the organization's means, and availability of comparable facilities from private or other public suppliers.....	☐	☐	☐	☐		
9. jointly completed with the using organization a clear, complete, written agreement, including--						
a. what was to be provided.....	☐	☐	☐	☐		
b. when it would be available.....	☐	☐	☐	☐		
c. who would be the contact or responsible person.....	☐	☐	☐	☐		
d. how late the agreement could be modified or cancelled.....	☐	☐	☐	☐		
e. how much fee (if any) would be assessed....	☐	☐	☐	☐		
10. ensured that an institutional representative was present during the event to handle any problems and submit a report before a final billing was issued.....	☐	☐	☐	☐		

	LEVEL OF PERFORMANCE				
	N/A	None	Poor	Fair	Good	Excellent
In maintaining an inventory covering equipment, supplies, and instructional materials, the administrator:						
11. developed appropriate policies and procedures for the inventory system, including the following steps:						
a. once received, items and their purchase/shipping documents were posted to inventory records	☐	☐	☐	☐	☐	
b. major items of equipment were assigned to specific users	☐	☐	☐	☐	☐	
c. serial numbers, or local inventory sticker numbers, were recorded for major items having a certain value or life span	☐	☐	☐	☐	☐	
d. moving or reassignment of major items was recorded	☐	☐	☐	☐	☐	
e. issued supplies were recorded as to quantity and user	☐	☐	☐	☐	☐	
f. inventory levels of supplies were periodically monitored to allow for timely replenishment or to detect unusual consumption rates (or pilferage)	☐	☐	☐	☐	☐	
12. coordinated policies and procedures with the persons involved in purchasing and receiving operations	☐	☐	☐	☐	☐	
13. ensured that all established procedures were followed	☐	☐	☐	☐	☐	
In providing a system of preventive maintenance for buildings and equipment, the administrator:						
14. developed policies and procedures based on available human and fiscal resources	☐	☐	☐	☐	☐	

	LEVEL OF PERFORMANCE					
	N/A	None	Poor	Fair	Good	Excellent
15. determined which maintenance operations would be conducted by institutional staff, which by maintenance contractors, and which by on-order service technicians.....	☐	☐	☐	☐		
16. ensured that records were kept, by item or type, of equipment inspections, serviceability, frequency of repair or adjustment, and maintenance costs.....	☐	☐	☐	☐		
17. informed purchasing officials of extraordinary maintenance costs (or freedom from costs) associated with items likely to be purchased again.....	☐	☐	☐	☐		
<u>In providing health, safety, and security programs, the administrator</u>:						
18. established and maintained good working relations with local public health, law enforcement, fire, and emergency medical agencies.....	☐	☐	☐	☐		
19. developed measures to increase the awareness of all faculty and staff in the area of health, safety, and security.....	☐	☐	☐	☐		
20. coordinated the assignment of certain responsibilities (e.g., fire warden, shop safety inspector, key control clerk) to specific individuals.....	☐	☐	☐	☐		
21. arranged for periodic inspections of health, safety, and security items (e.g., first aid kits, fire extinguishers, alarms).....	☐	☐	☐	☐		
22. arranged for rehearsals of health, safety, and security procedures (e.g., fire drills, tornado alerts).....	☐	☐	☐	☐		
23. recommended renovations to facilities or revisions of procedures based on crime prevention/resistance inspections by law enforcement officers.....	☐	☐	☐	☐		

	LEVEL OF PERFORMANCE					
	N/A	None	Poor	Fair	Good	Excellent
24. instituted or operated a system of controlled issuance of keys.....	☐	☐	☐	☐		
25. instituted a schedule for the locking of doors to critical areas or for electronic security.....	☐	☐	☐	☐		
26. demonstrated ability to temporarily restore utilities or other building systems to emergency service pending arrival of technical assistance.....	☐	☐	☐	☐		

Level of Performance: All items must receive N/A, GOOD, or EXCELLENT responses. If any item receives a NONE, POOR, or FAIR response, the administrator and resource person should meet to determine what additional activities the administrator needs to complete in order to reach competency in the weak area(s).

ADDITIONAL RECOMMENDED REFERENCES

American Vocational Association. Let's Teach Safety. Arlington, VA: AVA Publications, 1980. (#10480)

Candoli, I. Carl; Hack, Walter G.; Ray, John R.; and Stoller, Dewey H. School Business Administration: A Planning Approach. Second Edition. Boston, MA: Allyn and Bacon, 1978.

Godbey, Frank W. Occupational Safety and Health in Vocational Education: A Guide for Administrators, Faculty, and Staff. Washington, DC: U.S. Department of Health, Education and Welfare, 1979.

Hawkins, Harold L. Appraisal Guide for School Facilities. Second Edition. Midland, MI: Pendell Publishing Company, 1977. ED 143 130

National Association of College and University Business Officers. College and University Business Administration. Third Edition. Washington, DC: NACUBO, 1974.

Roe, W. H. School Business Management. New York, NY: McGraw-Hill Book Company, 1961.

Sommer, Cy. Safety Standards Plan for Middlesex County (NJ) Vocational and Technical High Schools. New Brunswick, NJ: Rutgers University, New Jersey Vocational-Technical Curriculum Laboratory, 1978. ED 160 866

Strong, Merle. Accident Prevention Manual. Chicago, IL: American Technical Society, 1975.

VocEd (Journal of The American Vocational Association): regular monthly feature "Safety First" is generally located around p. 50.

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